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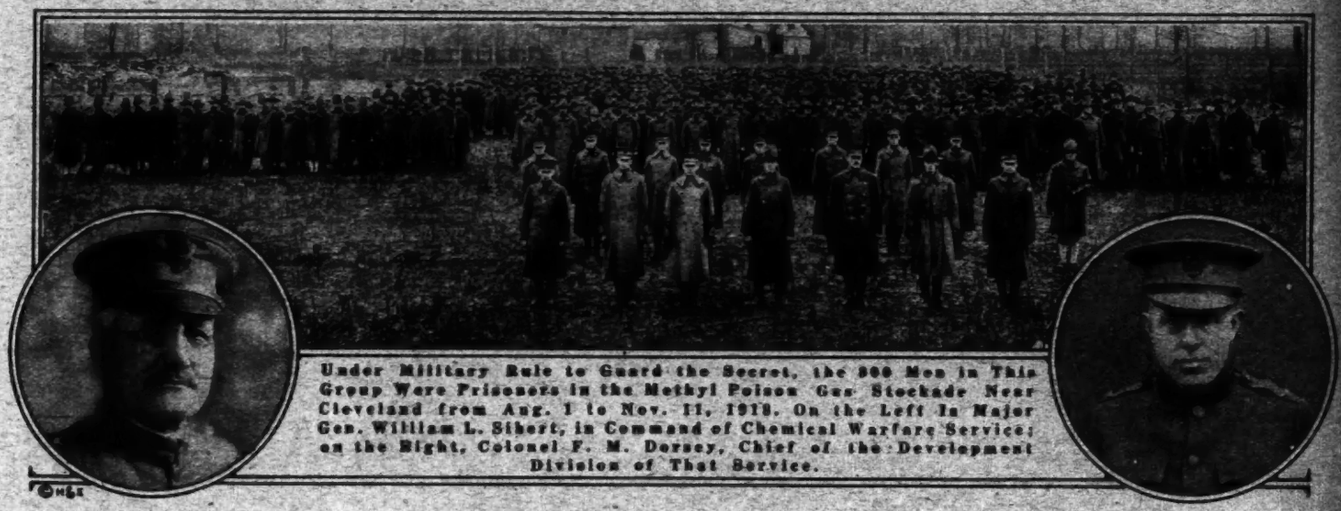


Under Military Rule to Guard the Secret, the 800 Men in This Group Were Prisoners in the Methyl Poison Gas Stockade Near Cleveland from Aug. 1 to Nov. 11, 1918. On the Left Is Major Gen. William L. Sibert, in Command of Chemical Warfare Service; on the Right, Colonel F. M. Dorsey, Chief of the Development Division of That Service.

OUR SUPER-POISON GAS

First Story of Compound 72 Times Deadlier Than "Mustard," Manufactured Secretly by the Thousands of Tons

It had the fragrance of geranium blossoms. It was an oily amber liquid, highly explosive, and bursting into flame with water. It was the American super-poison gas, deadly by contact or by inhalation of the smallest detectable portion. A drop on the hand would cause intolerable agony and death after a few hours. It was called methyl (partly because that name did not describe it) and it was the climax of this country's achievement in the lethal arts.

The signing of the armistice spared the enemy any first-hand acquaintance with the terrors of methyl. Major Gen. W. L. Sibert, in command of the Chemical Warfare Service, had directed that 3,000 tons of it, in shell and drums, be in readiness on the battlefield March 1, 1919. Ten tons a day were being produced in an eleven-acre plant near Cleveland, Ohio, and the plant was two months ahead of its schedule when Foch crossed No Man's Land to offer terms to a beaten foe. It is estimated that ten tons of methyl is one ton more than enough to depopulate Manhattan Island; and so it is not difficult to guess what would have happened had Hindenburg and his cohorts persisted until Spring.

Two days after the armistice was signed workmen began dismantling the big plant. They scrapped the complicated and expensive apparatus, every piece of which had been specially planned and manufactured for the production of the most terrible instrument of man-slaughter ever conceived. On Feb. 1 the work of demolition was complete. There remained no trace of that scattering array of barracks and laboratories which had been a cradle of death. But the formulas, processes, and personnel were painstakingly set down for the records at Washington against the contingency of another war.

There did remain, however, tons and tons of methyl. What was to be done with it, now that there was no longer any active occasion for exterminating Germans? Cleveland did not want the deadly stuff dumped into Lake Erie, and there seemed no practicable method of neutralizing its deadliness chemically. Almost enough was on hand to destroy the entire people of the United States, and some safe way must be found to dispose of it.

The ocean was selected as its catch-basin. Difficulties were met in transporting the stuff from Cleveland to the ocean. Handling such quantities was perilous. So it was put into big iron containers, for it does not react on iron, and those containers were loaded into freight cars. Then there was assembled the most extraordinary train probably that ever traversed American railroad tracks. It moved under an armed guard and on a special schedule. No railroad employe rode on it except the engine driver. The train moved slowly, so that two days were consumed in the journey from Cleveland to the Edgewood Arsenal near Baltimore. And then the iron containers were stowed gently in a ship and taken fifty miles to sea, where they were lowered over the side into water three miles deep.

Rust will eat pinholes into those containers, and there will be a minute and gradual intermixture of water with their fatal contents. In such circumstances there is no flame, but a slow chemical reaction which produces two nontoxic compounds. Experts do not believe even that fish will perish from the presence on the ocean bed of this vast quantity of poison. When the salt water of the Atlantic embraced the last of those iron tanks, finis was written to a chapter in American war effort which, until now, has been a secret scrupulously guarded.

Compare this secret new compound with "mustard," which the chemists dubbed "king of poison gases." Mustard was first used by the Germans, with terrific effect, at Ypres, July 20, 1917. Thereafter its use became general, and afforded such marked tactical advantage to the enemy that retaliation by the Allies became imperative as a matter of self-preservation. American chemists devised a formula one-fourth more toxic than that used by the Germans. The gas, known to chemists as dichlorethyl sulphide, is now the common property of the combatant nations. The processes by which it is made are generally known. It is a sweetish liquid, both in taste and smell, about as volatile as turpentine. In contact with the skin its presence is at first not noted. Then there begins the burning and swelling which prompted its nickname among the Tommies. It spreads through the tissues, and on reaching the lungs breaks them down, setting up what is called "chemical" pneumonia, usually fatal.

Methyl is somewhat more volatile, and is comparable in that regard with benzol. Instead of being inoffensive at first contact, it sets up an acute and almost unendurable pain. It does not spread through the tissues, but poisons the blood and attacks first the kidneys, then the heart and lungs. It hardens the cell tissues of the lungs, and causes simultaneously strangulation and a heart affection which speedily produces violent death. If taken into the lungs by inhalation in any perceptible quantity it kills almost instantly. It is estimated to be seventy-two times deadlier than mustard.

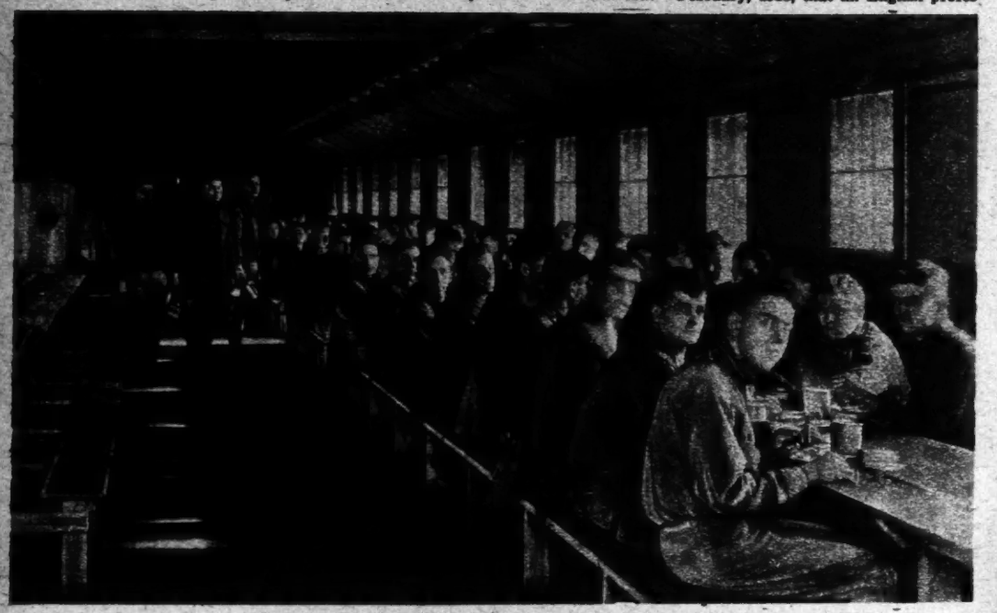
The processes of manufacturing the two poisons differ radically. It is not permissible even now to tell what basis is used for methyl, but its manufacture from the raw material requires but a short time. The equipment is elaborate. No fear is felt that experimenters will be able to make such a gas. That the United States came to know of such a poison was due, in the first place, to an accident. Years ago a student of chemistry, then living in another country, happened upon a combination which almost cost him his life. It was a compound never made before, or at least never recorded. Subsequently he came to this country, and when the question of poison gases came to the fore he recalled his narrow escape and imparted the information to the Government. The production of methyl resulted.

Not one worker died from poisoning. In large measure this was due to the precautions enforced by Captain George A.

Plummer, a physician from the Mayo Institute, whose work was the care of lives in an institution dedicated to the destruction of life. But, in addition to these precautions, a mask and suit of clothing was devised which afforded protection against methyl. Defensive work went hand in hand with the offensive work. None of the gas masks invented to save lives from mustard gas and the other poisons was effective against methyl. Is is a certainty that even now should it ever become necessary to use this poison in warfare, the enemy would be a long time in finding a way to protect himself. But the workers themselves were equipped with a uniform and face covering which afforded safety.

The work went ahead with remarkable rapidity. An entire plant was supplied with an equipment such as had never been used before. To complete the plant about methyl, even if the public had known anything about it. This compound is known to the Chemical Warfare Service also as G-34. The preliminary experimental work with it was done by the Research Division at the American University, Washington. When General Sibert on July 12 last told Colonel Dorsey to make ready to manufacture the poison, it had been produced by a laboratory process of five steps. Subsequently the fourth and fifth steps were revised. But the immediate problem was the design and layout of a full-scale equipment for quantity production. Some of the raw materials required were of an unusual nature for such work, and were difficult to procure. It was necessary to manufacture two of them in the plant itself. And it was necessary to assemble a new organization of exceptional calibre.

Colonel Dorsey set to work with that



Mess Hall in the Plant Where the Methyl Gas Was Made; the Workers Slept in Hastily Constructed Barracks in the Stockade.

required three months. The speed accomplished was due to the fact that the biggest industries in the United States fitted for that kind of work put themselves behind Uncle Sam in his war effort.

Colonel F. M. Dorsey, formerly chemical engineer of the National Lamp Works of the General Electric Company, a graduate of Ohio State University in 1908, and a man who added courage and tremendous driving energy to his specialized technical ability, became chief of the development division under General Sibert. The General Electric Company permitted him to give all his time to the work. M. W. Allen and Mr. Batchelor of the National Carbon Company, F. S. Terry and B. G. Tremaine, General Managers of the National Lamp Works, and J. E. Randall, its consulting engineer, offered their facilities and met all the expenses involved, under an agreement to be reimbursed later at the convenience of the War Department. This was to save the time which would have been consumed in waiting for appropriations. Time was as precious as poison gas in these days; and to the efforts of these men can be credited much of the success of the development division of the service.

Captain W. H. McAdams, a graduate of the University of Kentucky, 1913, became Colonel Dorsey's executive assistant and right-hand man. Other executives and experts were recruited from the largest and most successful industrial establishments in the United States. The companies put into the war work assigned to them not only the superb technical equipment of their employes, but also their own tremendous resources.

In the production of mustard and other poison gases known to the public some complaint was made of delays. No such complaint could have been made energy and lack of ceremony which had won him a name in the industrial world for getting things done. He took over on July 19 the abandoned plant of the Ben Hur Motor Company at Willoughby, Ohio, a suburb of Cleveland. On July 20 he installed Major James B. Conant of the Research Division there, with Lieut. Col. W. G. Wilcox in charge as Superintendent. On July 26 there was a guard on hand of twenty-five men, and work was under way. The plant was in such condition that it was necessary to grade the dirt floor, wire it for electricity, provide for sewage and water, install desks and chairs. The first of the laboratory equipment arrived in trunks, as personal baggage. Colonel Dorsey was in a hurry.

Space will not permit a detailed narrative here of all the obstacles overcome, of all the vexatious barriers to be hurdled in order to make this a record achievement in speed. The utmost secrecy surrounded the efforts. It was forbidden to officers and men to divulge the nature of the product or even the existence of the plant. Mail was censored. A Cleveland Post Office lock drawer was used, and letters were mailed and received there, for the very name of Willoughby was verboten in correspondence. Telegrams were sent through the headquarters at Nela Park. The experimental plant, as it was called, was conducted as an army post, and the men were not permitted to visit Cleveland. The work was hard and there was no recreation. But patriotic men and women of the neighborhood, who knew something was being done for the country but not what was being done, supplied the men with reading matter, a Victrola, fruit, and pies, and even a grand piano!

Klaxon horns were installed and an alarm system agreed upon, and the men in the plant worked always with their masks in the "alert" position. A fire and gas brigade was organized and alarms were given at intervals, sometimes "for cause." But none of the men was lost from poisoning. The only death at the exprimental station was from influenza.

The methyl was packed partly in 155-millimeter shells, each carrying about ten pounds of the liquid, and partly in drums carrying from 350 to 400 pounds to be dropped from airplanes. It is estimated that fifty of these drums, judiciously dropped about Manhattan Island, would kill its population.

In this connection it is pertinent to reveal some facts, until now not known to the public, about the manufacture of mustard gas. The chlorhydrin process for making this poison was unsuited to quantity production, and it was not until February, 1918, that an English profes-

sor's discovery of a new method was cabled to America. The cablegram anticipated by just two days a discovery of the same reaction at George Washington University in Washington, where experimental tests were under way.

In March a small experimental station was established at Taft Avenue and East 131st Street in Cleveland, with Colonel Dorsey (then Mr. Dorsey of the National Lamp Works) as technical director. The little two-story office building of the Great Lakes Refining Company became, in August, the offense section of the Development Division, with Colonel Dorsey in charge. It was connected with a large single-story structure suitable for plant operations.

This plant, within six miles of the Cleveland public square, was in a congested district, and great precautions were necessary to avoid gassing the neighbors, who did not suspect the deadly material being prepared within. But few outsiders ever became aware of the nature of the work being done in East 131st Street, and no serious trouble was caused by it. The second-story room was converted into a control and research laboratory, and was equipped with ten well-ventilated hoods and all the other necessary equipment. The rapid assembly of the materials was made possible through the co-operation of Cleveland manufacturing concerns, whose attitude throughout the war has been thus expressed: "If we have it, the Government can have it; if we haven't, we'll get it."

At this plant no barracks nor mess hall was provided, and the men ate and slept wherever they could in the neighborhood. As each arrived, he was told what was being done and its importance was explained to him; and the officers in charge report that the workers performed eagerly and thoroughly the tasks assigned to them, although often they were tedious and hazardous.

The results at this plant were immediately transmitted to the Edgewood Arsenal (Hastings-on-Hudson) plant, to the National Aniline and Chemical Company plant at Buffalo, and to the Dow Chemical Company at Midland, Mich. At each of these places mustard gas was made in quantities. Nela Park, so named from the initial letters of the National Electric Lamp Association, forerunner of the National Lamp Works, was the hub from which these spokes radiated. At Nela Park investigations were made of two other poison gases, before the methyl work was undertaken, but the War Department stopped the other inquiries before they were completed. The main result of the 131st Street plant was the development of mustard; the main result at Willoughby was the production of the death-dealing methyl.

It may be seen with what caution and energy the United States set about meeting German ingenuity in cruelty and destruction, and how successfully American chemists surpassed the enemy chemists. The visible death-dealing evidence of their technical skill has been destroyed. France and England and Italy are continuing their chemical warfare services unimpaired. The United States has disbanded her personnel and dismantled her plants.

To the Chemical Warfare Service was assigned the Bureau of Mines. Dr. W. K. Lewis, representing the bureau, went

Poison Gas Worker Armored Against Injury With Mask and Suit of Special Material.

to Cleveland on April 28, 1917, to enlist the aid of the National Carbon Company and the National Lamp Works of the General Electric Company. At that time mustard gas was the main goal, and electric power was required to make chlorine and graphite for the electrodes. Moreover, expert knowledge about charcoal was required on the defensive side of the work, in devising gas masks and other protective apparatus. For example, tests at Nela Park proved that cocoanut hulls were the best raw material for making absorbent charcoal, and so that material became the standard. The plant of the Great Lakes Refining Company in Cleveland was taken over for mustard gas research, and its personnel of 35 was increased to 175 officers and enlisted men. That was a microscopic but typical example of the methods adopted to meet the greatest emergency in America's military history.

PARIS, HEART OF THE WORLD

Scenes Among the Envoys From Far and Near on the Mission of Peace—Americans, Poilus, Anzacs, and Japanese Commingle With Bereaved in the Crowds

By HILDEGARDE HAWTHORNE.

PARIS these mornings between Winter and Spring resembles a vast soap bubble shaken from some titanic pipe. The mist that wraps her, milky-blue near by, is tinted with the faint hues of the rainbow in the distance. Palace, statue, mighty arch and monument, long vista of trees, wavering fountain, bridge beyond bridge across the flood-high Seine, all are magically enhanced in beauty, mirage-like, softly radiant.

Never was the beautiful city so beautiful as now, after her years of mourning. Gone are the piles of sandbags and the protecting mortar from her most precious treasures; her lamps are lit again at night, and the moon is no longer a menace. She wears her war trophies like ornaments, and up and down her splendid streets runs the bright river of her and her allies' victorious colors, the standards of civilization. Paris is slowly returning to the lost life before the war—but it is a greater Paris. She is still the capital of France, the intellectual and artistic capital of civilization, but she is more than these.

She is today the heart and centre of the entire world.

For it is within her gates, on the brink of her historic river, that the fate of the world is being discussed, that decisions which will rule for generations to come are being made. Here the threads come together and the pattern is forming. Here, where a few months ago the shells of the great cannon were falling day and night, under the skies where enemy aviona lurched past on their murderous business, the nations of the world are met to settle the question of the future—met to make out of death, life; out of corruption, immortality; out of the age-long terror, everlasting peace.

It is impossible to live in Paris at this time and not be conscious of the tremendous fact that the world is here. It is evident in the very movement of the streets, in the languages spoken at every café, in the happening of every different minute.

There is an enchantment in sitting at one of the little tables on the terrasse before any one of the well-known restaurants and watching the passersby. There are the French, of course, and a French crowd is endlessly interesting. Civilian clothes are beginning to be evident, but uniforms still dominate. How smart they are, the French uniforms, whether blue or khaki, or the black blouse and red breeches of the snappy aviators or the distinctive all black of artillery officers, when they are smart! And how faded and pathetic when they are simply the war garments of the poilu, who wears them none the less with a dashing air and smiles upon the world from under his blue cap with an unconquerably gayety that even the loss of an arm or a leg seems unable to subdue!

Just beyond, with his foot up on one of the benches that stand so conveniently along the Paris boulevards and avenues, is one who has lost both arms and who is greatly amused at the efforts of his chum to tie his bootlaces for him. The thing at last accomplished, the chum completes his kind offices by lighting a cigarette and sticking it between the lips that are smiling at him—but a little midinette, who has paused to watch, dries her eyes with her handkerchief as she moves on.

Naturally there are the French, but there is every one else, too.

Men in uniform from all the armies of freedom, and each uniform with its story, with its vision.

Here, in their fog-green and picturesque capes, a few Italians pass. From what high-hung battlefields among the cloudy peaks have they come; what bitter struggles in deep ravines have they not known, fighters of the mountains and the torrents? Close behind follow a half dozen spahis, in white cloaks lined with scarlet, swarthy faces under turbans, the Orient come to fight here in misty France. Now we see a Highlander, tall, supple, in the kilts that are the joy of Paris, and on his breast the Victoria Cross. He has looked on a thousand deaths and among the bravest has made a name for bravery.

There go some Anzacs, tanned and smiling, their dashing hats giving them a rakish air. Gallant-looking youngsters. Under the dry desert sand of Gallipoli lie thousands like them, and other thousands in Flanders and France, wherever the fighting was most terrible. Now it is Vimy Ridge that you think of, as two Canadians escorting two pretty mademoiselles, seek for a table on the terrasse.

Oh, the uniforms and their stories!

Verdun speaks there where two French officers of the 7th Corps stand a moment chatting. That number is known to all France. And here is the Argonne coming, in khaki, where a group of Americans from the 35th Division climb out of a couple of taxis, anxious for all the fun they can take in on their short Paris leave. Your soul remembers the tangled declivities, the barren hillslopes with their scattered crosses, and you murmur, "Thank God, these got back!"

Pass now some Japanese in French uniforms, liaison officers probably, but they turn your mind to icy Siberia and the struggle still in progress there. Now and again a chasseur alpine, with dark and rollicking eyes, and a bewildering line of decorations, the well-known dark-blue beret snappily topping him off, hastens along, giving an impression, even on the boulevards, of the vigor and the élan that carried his regiments to victory on all the bloodiest battlefields of the war.

If you are lucky you may see one or two of the Contemptibles. A few are left of that first, too-recklesaly gallant army, flung a sacrifice to unpreparedness. And you are sure to see some of our Marines, first of our men to show the world that America had come to fight, and to fight supremely well.

Sitting there at your little iron table, sipping a consummation, you can read the long and glorious and tragic epic from its first page to its final one, told in color and form by the uniforms. And around you, at other tables, you hear talk, talk on many subjects, gay talk, political talk, grumbling talk on the Vie Chère, that absorbing topic in which all the world joins. But ever and always recur the great names of the great war—the eternal names. Verdun, St. Mihiel, Ypres, Douaumont, Montfaucon, Château-Thierry—for all those about you have fought and suffered in the war, or seen those they love go forth to fight. And, though the war is over these months now, some still wait for the return of the beloved, whom they refuse to give up. Missing! Perhaps the most tragic of all war words.

You hear a woman say in a voice in which resides a curious, sad obstinacy:

"Yes, but it is possible that he is ill somewhere, too ill even to know that the war is over—perhaps he is insane even. You know there are many cases—"

She has held the hope of his return for years—she cannot let it go now that peace has come. He is insane—perhaps! But oh, still alive, still recoverable.

But it is not only the past that you read in the streets of Paris today; it is the present and the future. Who would have thought to see the blue flag with the Arms of America flying from the car of the President here in the French capital? Yet it passed you a dozen times a day, and at the Crillon, about the luncheon hour, a small crowd gathered every morning to watch Wilson leave from some conference there. Clemenceau's car is also familiar to all, and often a Frenchman could be seen to lift his hat as it went by, a tribute to the grand old man of France. During the days when le Tigre lay in danger of death from the bullet in his lungs, it was interesting to observe the crowd in the Rue Franklin: workingmen in linen blouse, chic-looking sewing girls, the newswoman from the kiosk on the corner, mingling with the statesmen, the Captains, and the Kings. And France, the land of true democracy and real courtesy, treats all alike. The anxious inquiry of the poorest received always a courteous response from the gendarme on guard, who answered that the Premier was doing well, and indicated the register, should Monsieur or Madame wish to sign as token of their interest.

But it is neither Clemenceau, Lloyd George nor Wilson who brings the sense of the mighty gathering of the nations home to you, significant as they are. It is the constant meeting with the envoys from small and distant lands that marks the fact. It is a glimpse of the grave Venizelos, preceded by his aid, a magnificent young Greek, tall and supple, clad in the short jacket and kilt of scarlet and blue, with scarlet fez and long blue tassel, a short sword by his side, and something eaglelike and shining about him. It is the calm figures in wonderful robes of black silk of two Chinese; it is the Prince of Serbia with his suite, men of a mountain freedom of motion and brilliant eyes; it is an Emir of Arabia in all his flowing garments, his keen and beautiful face, young and bearded, framed in the folds hanging from his turban. It is this mingling for one purpose, this coming together on the same errand of far and foreign folk, constantly in evidence as you pass about Paris, that tells you the world is here—here for the great cause, its cause, its future.

A little way beyond the gates of the city, a few hours ride in a car, you come to the fringe of desolation. You look out on a desperate horizon that seems forever removed from any civilized thought or act. Crushed towns, dead trees, a soil murdered and desecrated, scattered over with the indescribable waste and débris of organized death, the broken machinery of destruction. Nothing living remains here save the scurrying rat.

Paris is so close to this that even now, with the danger over and the brutal invader beaten, you tremble as you look. Here the cannon, whose fearful clamor you had heard during those dark days in Paris, worked their will.

Now the many crosses, gathered in groups or scattered solitary, accentuate the sense of an enormous silence, of a brooding wait. Here is the last word spoken, the ultimate sacrifice made, the end of a cycle. There, not far away, in the city saved by these young men whose bodies lie under your feet, is the beginning of a new cycle.

May the new word it speaks be a fit response to this silence, the reward it brings approximate the immortal Calvary whose features you here look upon. Now, at last, and in all truth, Let there be Peace.

American Soldiers Seeing the Sights of Paris on a Y. M. C. A. Truck Which Leaves the Palais de Glace Daily.

How Paper Bullets From Air Helped Win the War

D'Annunzio's "Three Ounces of Eloquence" Credited With Lowering German Morale More Than Shell—Propaganda From Planes for Victory Loan Drive

THREE tons of explosives dumped on the head of the enemy would not do as much as three ounces of eloquence," said Gabriele d'Annunzio recently.

Lest any one should take the Italian poet's epigram as a literary effusion unrelated to life, it should be remembered that d'Annunzio not only peppered the Austrians with pamphlets, but also bombed them with shells. He conducted extensive experiments with both brands of persuasion. As leader of the Escadrille Serenissime, he bore on his airplane the figure of the winged lion of Venice, which spoke to the Austrians sometimes in tones of thunder, and again in the seductive whisper of propaganda. When d'Annunzio flew over Vienna last August, and scattered red, white, and green dodgers over that capital, he helped to put the finishing touches on a campaign that had begun with the roar of artillery.

The Viennese expected shells and received arguments. Thus they learned a lesson in civilization.

The Italian Government throughout the war refused to permit the Escadrille Serenissime to employ the inhuman tactics of the German airmen over London and Paris, and d'Annunzio did not speed his Venetian lion toward Vienna until the time was ripe for paper bullets. The French aviator, Marchae, had tossed bundles of proclamations into Berlin from his machine, but this example was lost on the people of Germany. The long-distance gun which slaughtered Parisians at their prayers in church was one of the German answers to this bit of French propaganda.

Long before the Escadrille Serenissime took the field with paper explosives, the Escadrille Lafayette was busy. Tom Hewitt, a New Yorker, who enlisted in the French artillery before we went into the fight, served later in the Hospital Corps, and then was graduated into the Lafayette, and made many a trip over the German lines, carrying destructive arguments in the form of pamphlets. Hewitt was a Sergeant pilot at the time we entered the war. He came back to this country after our declaration of hostilities, registered in the draft, and went off with an infantry regiment. Not wings but wound stripes were his portion in the American service.

Extensive propaganda work was carried on in France by the American Army, but little has been said about the method of campaigning. Here is the succinct report made by Lieutenant C. H. Ball of Danville, Va., who was attached to the 104th Aero Squadron of the 5th Army Observation Group:

"The 104th Aero Squadron, from Oct. 1 up to the time the armistice was signed, made twelve trips over the German lines in the Argonne district and north of Verdun to drop propaganda into the German trenches. The 99th Aero Squadron also engaged in this work and made an equal number of trips. In each case a pilot and observer made the trip. We carried large packets of circulars and folders written in German, which had been prepared at a printing press behind our lines.

"The first of the folders distributed among the Germans was a map of the St. Mihiel salient, which showed the great gains of the Allies during a short period of time. Accurate figures were given of the number of German prisoners taken during that and previous offensives.

"The reason for this campaign from the air was that the German commanders in different sectors—not only in the Argonne and around Verdun, but from one end of the line to the other—had lied repeatedly to their men with regard to the amount of territory captured by the American, British, and French forces, and also as to the number of German prisoners taken by the Allies.

"The Army Intelligence Department, checking up on the results of this initial propaganda campaign, learned that both the German High Commission and the unit commanders were greatly disturbed by the activities of the British, French, and American aviators. The Intelligence Department also found out that German commanders were reporting—confidentially, of course—lowered morale in the ranks. German soldiers had become uneasy, and rapidly were losing faith in their officers by reason of the information scattered from the air.

"The second propaganda campaign was launched before this disaffection became known on the American side. Hundreds of thousands of postcards were distributed in the German trenches, with blanks to be filled in by the finders in case they happened to be taken prisoners. These cards were to be mailed to the relatives of the captured Germans. The writers could, if they wished, state whether or not they were being cared for properly by their captors. To counteract the tendency among the German privates to surrender in large groups the officers in the boche regiments had been careful to spread the lying report that the Americans were intensely cruel to their prisoners.

"The postcards not only were an invitation to the German soldiers to quit fighting and surrender, but also to send the facts back home. Other pamphlets distributed about this time by our aviators contained photographs showing large bodies of American troops concentrated on the French and British fronts. These pictures, in hundreds of thousands of instances, gave the German soldiers their first correct information as to the odds against them, and were more potent than H. E. shells.

"More than 60,000 pieces of literature were dropped by the 99th and 104th Aero Squadrons. Each of these pamphlets and folders probably was read by many Germans.

"Captain Leyton Reynolds and Lieutenant H. A. Nichols, both well known as aviators, took part in this propaganda work in addition to myself."

An aviator out on a bombing job generally could tell whether he had made a direct hit on a railroad station, aerodrome or trench. When he dropped packets of pamphlets he could not note the effect of his work immediately, but the crowded prison cages, with their complements of Germans who had surrendered willingly at the first opportunity, and who still carried in their pockets the reading matter distributed from the air, later gave evidence that he had not risked his life in vain.

Many a prisoner was brought in with a well-thumbed copy of a booklet which had been printed on the American side and presented to the boche for "educational purposes." Toward the end of the war the number of prisoners thus equipped with reading matter grew so rapidly as to create a serious housing problem.

In addition to airplanes, many varieties of balloons were used for spreading American ideas among the German soldiers. The largest rubber company in the United States, for instance, made 12,000 small rubber balloons at the order of the army and navy authorities. These balloons could be inflated to a diameter of 3½ feet, and could carry 1½ pounds. Some were used as targets in airplane practice, and others were released to register wind velocity for the benefit of gunners.

A number of experiments were made with them in connection with the propaganda campaign, and it was discovered that they could travel several hundred miles with their "three ounces of eloquence." One actually covered 742 miles. They were particularly useful in areas far back of the firing lines. The American planes could not get as far into the enemy's country with their information as the little balloons could. The German guns that bombarded Paris, astonishing as their range was, could not do such long-distance execution as the balloons, some of which traveled a day and a half before they dropped their messages to the Germans.

A large number of paper balloons were used in this work by the Americans, French, and British. The Italians found that rockets could carry deadly charges of propaganda among the demoralized Austrians. Hand grenades also were brought into play.

Major Gabriele d'Annunzio.

Paper bombs have been rained upon the people of the United States and Canada, but not by hostile airmen. On both sides of the border the airplane has been used to good effect in war loan campaigns. I. W. Warshauer, a New York youth, who joined the Royal Flying Corps in November, 1917, after an unsuccessful effort to get into the American Aero Service, flew from Toronto to Ottawa during the Fifth Canadian Victory Loan drive, and scattered pamphlets all the way. In this manner publicity was given to the terms of the loan, particularly among people who had read and heard but very little about the Government's plans for raising funds to prosecute the war. Many American aviators have assisted in the same way in the flotation of the four Liberty Loans, and will take part in the Victory Liberty Loan Campaign beginning tomorrow.

Wholesale use of the airplane during the coming bond drive in this country would facilitate the work of the Government Loan organization, particularly in the country districts. Gabriele d'Annunzio's "three ounces of eloquence" can be distributed in this way with the maximum of effect.

Lloyd George said at the beginning of the war that Germany would be laid low with a silver bullet. His prophecy came true, but paper bullets played an important part in the victory.

© International Film Service.

During the War Balloons and Airplanes Scattered Broadcast Behind the Enemy Lines the Speeches of President Wilson and Other Material Calculated to Weaken German Morale.

"It's big, but think of the other fellow's bill!"

Ruskin, Apostle of Industrial Democracy

ENGLAND is paying honor to the memory of John Ruskin. In a smaller measure, his centennial is being observed in this country. It seems especially fitting that the work of the man should be brought to the light at this period of labor unrest and industrial agitation. He was among the first exponents of the Workingmen's College Movement, to which he lent much of his time and money. His philosophy, it is true, has been condemned by many as being Utopian and impractical, but it shows evidence of an honest endeavor to remedy ignorance and lack of opportunity among the poorer strata of society.

Some of Ruskin's statements on the value and dignity of labor sound vastly familiar today. In his essay on work he takes up the matter of class distinctions among the industrious. "There are class distinctions," he says, "among the industrious themselves; tremendous distinctions which rise and fall to every degree in the infinite thermometer of human pain and human power—distinctions of high and low, of lost and won, to the whole reach of man's soul and body.

"These separations we will study, and the laws of them, among energetic men only, who, whether they work or whether they play, put their strength into the work, and their strength into the game; being in the full sense 'industrious,' one way or another—with a purpose, or without. And these distinctions are mainly four:

"Between those who work and those who play.

"Between those who produce the means of life and those who consume them.

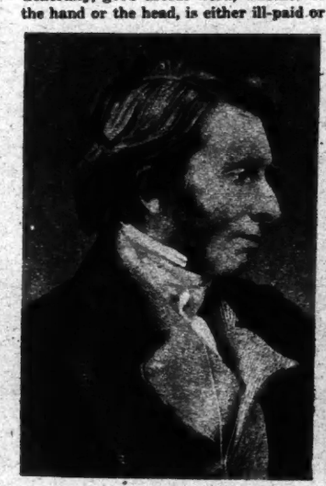
"Between those who work with the head and those who work with the hand.

"Between those who work wisely and those who work foolishly."

Taking up the third distinction he says:

"Supposing, then, we have determined with appropriate justice who is to do the hand work, the next questions must be how the handworkers are to be paid and how they are to be refreshed and what play they are to have. Now, the possible quantity of play depends on the possible quantity of pay, and the quantity of pay is not a matter for consideration to handworkers only, but to all workers. Generally, good useful work, whether of the hand or the head, is either ill-paid or not paid at all. I don't say it should be so, but it is always so. People, as a rule, only pay for being amused or being cheated, not for being served, five thousand a year to your talker, and a shilling a day to your fighter, digger, and thinker, is the rule. * * *

"And for you there will come a time for better payment; some day, assuredly, more pence will be paid to Peter the Fisherman and fewer to Peter the Pope; we shall pay people not quite so much for talking in Parliament and doing nothing as for holding their tongues out of it and doing something; we shall pay our plowman a little more and our lawyer a little less, and so on; but, at least, we may even now take care that whatever work is done shall be fully paid for; and the man who does it be paid for it, not somebody else; and that it shall be done in an orderly, soldierly, well-guided wholesome way, under good captains and good lieutenants of labor; and that it shall have its appointed times of rest, and enough of them; and that in those times the play shall be wholesome play, not in theatrical gardens, with tin flowers and gas sunshine, and girls dancing because of their misery; but in true gardens, with real flowers, and real sunshine, and children dancing because of their gladness; so that truly the streets shall be full (the streets, mind you, not the gutters) of children, playing in the midst thereof. We may take care that workingmen shall have at least as good books to read as anybody else, when they've time to read them; and as comfortable firesides to sit at as anybody else, when they've time to sit at them. This, I think, can be managed by you, my working friends, in the good time."



Two Rare Photographs of John Ruskin.

It is, however, as an art critic that Ruskin is most remembered. According to some authorities the moral of his teaching, that all living art requires truth, nature, purity, and earnestness, has become an axiom of all aesthetic work or judgment. To John Ruskin is given the honor of being the founder of the Reformation in Art, but in spite of that there are many today to cavil at his teachings. Ruskin's "Modern Painters" and "Seven Lamps of Architecture" are among his best-known books on art. "Sesame and Lilies," "Time and Tide," show him as the social economist. He died in January, 1900, just a month before his eighty-first birthday.

Amateur Night in an Army Hospital

Backstage at Whitby Where Canada's Maimed and Sick Soldiers Are Winning Back to Health and Usefulness

Text and Sketches by NORMAN BORCHARDT, R. A. F.

The writer and illustrator of this article is a young artist whose work in pen and ink was familiar to many readers of New York newspapers. Failing to get into the American Army, he joined the Royal Flying Corps of Canada soon after we entered the war, and was seriously injured in an airplane accident at a flying field in Texas. He is now one of the convalescents at Whitby.

ALL the bloomin' world's a stage an' we are struttin' on the boards of it." The forlorn figure in that once fashionable color—khaki—swung the mop over the oiled floor lackadaisically. How could one take more than a passing interest in mopping when his heart was yearning for the glory of the spotlight? Joy went clean out of the mopping as he swung the oiled rags more and more slowly over the floor.

You see a passion for theatricals had descended upon Whitby. It is a curious fact that just as actors love to dress up and play the soldier so soldiers love to dress up and play the actor. And here at Whitby there was little else for soldiers to do.

Whitby is the home of Canada's maimed and sick men, returned after months or years of fighting and not so fit as to be ready yet to start where they left off in civilian life. It is a world in itself, from gymnasium to theatre—a world composed of men gathered from all trades and professions and classes—alike in that they gave up what they had and were to serve a cause, and alike also in that they have been all more or less broken in that service. The man with the mop was one of them. He had been an aviator once. Before that he had been an artist of sorts. Now he burned to be a player. And Whitby supplied the means of realizing his ambition. All he had to do was to get assigned to "perform" by the officer in charge. Now was the night of the performance. And here he was in front of a small door marked "Strictly private." "Sure," he said, "I'm a private and a performer likewise," and opened the door and disappeared within.

The backstage regions of the Whitby Theatre are not very different from backstage regions in other theatres—not quite so spacious as the Metropolitan Opera or the Century in New York, and not quite so cramped as the Punch and Judy. The man with the mop had taken notes of the Russian Ballet in the first, played hide and seek with tempestuous Ariel in the second, and crowded in between decks with the Parrot and the Pirates of Treasure Island in the last. He had even made sketches of Anne Boleyn and King Henry VIII., while the ladies of the Court looked over his shoulder and Sir Herbert Tree presided with ecclesiastic pomp over the dress rehearsal of a real Shakespearean revival. Therefore, what he found there was not quite strange to him.

As a matter of fact, what he found immediately inside the door was a couple of soldiers. One was standing before a mirror powdering his face, and adding a pink glow to pallid cheeks. The way he did it was really very like the way a Broadway actress does it. The other soldier, dressed with peculiar splendor in uniform, told the newcomer that he himself had charge of all the musical numbers of the show which was about to delight the theatregoers of Whitby.

But now another soldier came tumbling in tumultuously. To the splendid one, now earnestly engaged in tuning a fiddle, he gasped: "Say, Boss, they got Bill and Sam locked up in the clink, they have; wot we goin' to do about it?" The tuning of the fiddle proceeded. "Well," said the tuner as he tuned, "What are they in for, and can't they get out long enough to do their duty as performers?" The other grinned. "Naw, they ain't pinched. It's some wise Mack locked 'em in an' they ain't got the keys to git out."

At that precise moment the door burst open and somebody fell in. "If it ain't Bill himself," said the messenger, and the Boss stopped tuning and looked sharp inquiry. "Ye see," explained Bill, "we was practicin' in the clink 'cause it was peaceful like, an' some blankety blinked blank locked us in. An' we just got let out."

At Whitby, you will observe, art knows no false pride. A prison room is as good to rehearse in as the finest salon—and easier to find.

A mild appearing Sergeant with a Red Cross on his sleeve appeared with a violin. They told him he could go out front and watch the show. They didn't need him. Also "a crowd of these here new fellas might just as well go out and watch the show, too. They won't be used." Clearly the theatrical ambition of the man with the mop had got to wait. He took the hint. But as he preferred to watch the show, if possible, from backstage he slipped up a convenient stairway into the wings. A bouncing young man in his shirt-sleeves, round of face, very unmilitary, but very businesslike, demanded peremptorily to be told who the intruder was and why. A quavering excuse was met flatly and firmly. Nobody was allowed behind there except the performers—and if somebody didn't get out somebody would call the Director, who was an Officer, and would see that the throwing out was done properly and in a military manner. Exit to find Officer.

"The Piccadilly Nut asked for a fox-trot."

What might have happened if the Officer had been found mere private imagination refuses to face. But from somewhere on high, descending a ladder, appeared a person who said everything was "Jake"—which in the British Army's version of O. K.—and rubbed his hands. He added, perceiving the intruder, "We have in our midst some reel antiques in the way of scenery. This here set was used by E. H. Sothern down in the Tulane Theatre in New Orleans, which is wrote plain on the back of it. And this here come from Marie Dressler's 'Tillie's Nightmare'—remember that on Broadway, wot?"

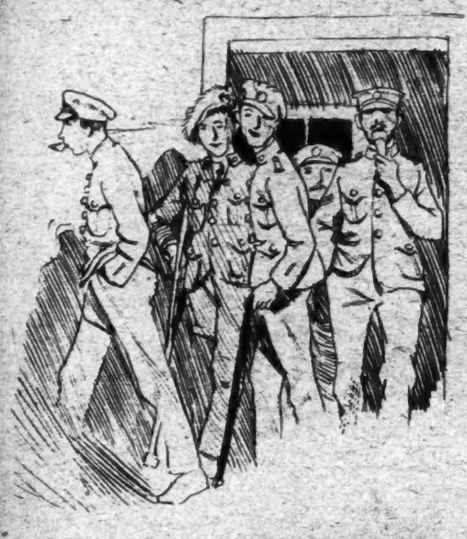
After which he climbed aloft again to where he belonged with the electrical gear and the switches. Very likely he'd been a stage hand before the war. But as likely as not he'd been something quite different. Meantime people had been drifting back and filling the narrow ravines between scenery and wall, and the intruder was lost among them and was not thrown out even when two Officers and Directors appeared and called for chairs to sit upon and do the directing. Out toward the footlights every now and again some enterprising player was peeping through a hole in the curtain with an eye on the attendance.

I am not going to describe the show. Only a little of what went on back of it. Troops of people kept flowing up from the wings — soldiers camouflaged. Through one door came a figure which to those who have descended into the valley of the shadows or to those who dwell in such places as Whitby, will not cease to mean something that it does not always mean to other men. A Nursing Sister, she was, with Red Cross on cap and bib, and very rosy cheeks. Another was a lady in riding costume, (who whispered confidentially that she had lived in New York before the war,) and another was another lady all in black—or black as far as it went—who held a wine glass filled with joy—a temperate joy of red paper, unspillable, undesirable, absolutely non-intoxicating. She said she was a vamp.

"Singing like Harry Lauder, or thereabout."

It seemed these ladies belonged to the next number, touchingly entitled "The Soldier's Dream." At the moment the spotlight was devoted to somebody who was singing like Harry Lauder—or thereabout. While he did the R. A. F. girl tried her best to look military until a Piccadilly Nut who was also waiting for his turn to oblige the company asked for a fox-trot. Promptly the R. A. F. girl gave up being military and danced.

Then came the call for their act—after some sawdust trenches had been arranged as a suitable place for the soldier of the dream to sleep upon and do his dreaming. The music started softly, the stage was dark except for the spotlight on the dreamer's face.



"At Whitby where men returned after months or years of fighting are not ready yet to start in where they left off."

"Two officers appeared and called for chairs to sit upon and do the directing."

Uncle Sam Playing Hostess

Belated Solution of the Housing Problem for War Workers in Washington

By HARLEAN JAMES.

ACROSS from the portico of the Union Station, Washington, on the other side of the Plaza, stands a long, low building of dark-gray stucco, surmounted by a small white cupola which somehow suggests Philadelphia and independence. It has a recessed entrance porch framed by five arches, and flanked by tall colonial windows. And on either side of it are the gable ends of two other buildings joined in the rear so as to form a "U." Literally acres of these "U" buildings cover what used to be open spaces between the station and the Capitol, and the impression is rather as if the architect had made a dozen models and placed them in every possible perspective.

The total sum of all the "U's" represents the United States Government's somewhat belated solution of the problem of housing the war workers in Washington, a problem which the end of hostilities has not eliminated, though it has reduced its proportions very greatly. For war work is not yet done, and war workers in Washington are still too numerous for adequate handling by Washington's existing private housing facilities. It was the dinner hour—5:30—and, under the new time-saving schedule, it was still quite light when the writer entered the central building, and followed a group of women to the desk at the right, and boldly asked for a guest ticket—price 60 cents. The lobby was furnished with comfortable chairs and adorned with pilasters and columns and glass-paned doors opening on the bricked inner court.

By 6 o'clock a line was forming. I learned that over 1,000 persons were served in a dining room which seated 600; that this was the dining room for the six buildings in the station group, and that another dining room would soon be completed for the Capitol group. In all, it seems, there are rooms for over 1,800 persons, and the twelve two-wing, three-story buildings, with the two administration and dining room buildings, infirmary, and power plant, occupy more than fifteen acres.

The open door of the dining room revealed on expanse of white table linen. There was no long line of women filing past a cafeteria steam table with the customary trays, though it was Washington, the cafeteria city. Instead, groups of six were seated about each round table. The 600 women were being served by fifty white-aproned maids.

Soon I found myself one of a pleasant group around one of the small tables. My companions were two young girls from Iowa, two college women from the Far West, and a widow from Kentucky. The silver on the table bore the monogram U. S. H. C., which translated means United States Housing Corporation. Organized by the Bureau of Industrial Housing and Transportation of the Department of Labor, this corporation is charged with the management of the Washington Residence Halls. The dishes were plain, not too heavy to be aesthetic and not too thin to be practical. Cold drinking water was secured from faucets in the pillars which automatically filled the glasses pressed under them. The dishes were removed from the tables and placed on wheeled wagons for transport to the kitchen. The walls were freshly painted a cream color—and the small-paned windows were hung in Dutch blue cotton rep.

My companions said the breakfasts were good. I know that I was served with piping hot soup, chicken croquettes, two vegetables, lettuce salad, a pot of tea, and excellent pie. Those who preferred coffee or milk had it.

My companions at the table told me of their trials before they accepted Uncle Sam's hospitality. Two had shared a room with two other girls, for which the charge was $60, or $15 apiece. They said they waited their turn to get into the bathroom. They waited their turn to comb their hair. They waited their turn to unhook their clothes from the single clothes closet.

For their meals they "ate around." They waited on the corner and saw car after car go by filled to the last inch. When they finally succeeded in getting a precarious foothold on a car step, they rode for thirty minutes jammed into a solid mass of humanity. Then they sought a breakfast place downtown. If they went to an order lunchroom and succeeded in getting a table, the waiters or waitresses were so rushed that they often had to wait another thirty minutes before they could be served. If they went to a cafeteria they waited in line for a chance to serve themselves. Exhausted and disgruntled, they arrived at their desks as near 9 o'clock as fate and the facilities of the City of Washington permitted.

At lunch it was the same old wait, and at dinner, after a day of pounding typewriter keys or working over columns of statistics, or filling out cards, or filing letters, or what not, they stood in line again to wait their turn. Even at the "movies," where they went to forget their troubles, they had to wait in the lobby for the seats to be vacated by the crowds before them.

And when at last they reached their room, crawled into their cot beds, and found themselves sinking into forgetful slumber, they were almost sure to be awakened by the return from a later entertainment of their two other partners in misery.

Experiences of the others bore a family resemblance to these—the burden of it all was "hustle and wait."

A lobby living room forms the connecting link between the buildings, and is supplied with cosy chairs and sofas, while gray-green hangings shelter the smaller writing rooms on each side. By this time the lights were on and groups of women were gathered about the shaded lamps to read or had pulled their chairs into chatty groups. Those with special callers had sought the semiseclusion of the smaller rooms or alcoves, but my guides, after stopping to introduce me to a pleasant young woman who sat reading the evening paper, took me on through the hallways which led to the bedrooms. They said that they each had single rooms, and the only double rooms were the corner ones. These, they said, were not very popular, as most of the girls preferred to room alone.

They showed me how they stowed themselves and their baggage into the compact space of their rooms. There was the clothes closet with convenient hangers and closed hat compartment. There was that joy of every woman's heart—the utility box of cedar on noiseless rollers, which might be kept under the bed. One of the girls pulled out her utility box and opened the lid to disclose her party clothes and special finery which she kept safe from dust and wrinkles.

I thought that the gray-green furniture, the chintz window hangings, the fresh, restful paper on the walls, the comfortable cot bed, the running water in each room, the scrupulous cleanliness of every spot, must all contribute to the rest and rehabilitation which are needed by every woman who works.

I asked who was responsible for the good housekeeping which appeals so much to women and which is so difficult to find, even in the best hotels. I was told that in every unit, which provided rooms for 162 persons, there were a house manager and an assistant who gave continuous supervision to the housekeeping, and one of whom was available from early morn to dew of eve—in other words, from 7 A. M. to 11 P. M.

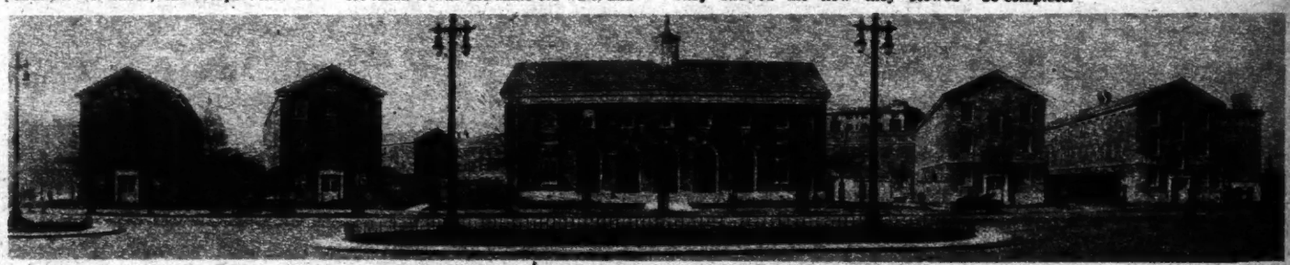
The girls showed me the bathrooms with their equipment, baths and showers. One of them remarked that her morning shower was worth the price of admission—$45 a month for room and two meals on week days and three meals on Sundays. The girls said that no one knew yet whether this amount would cover the cost at present prices, but that they would be willing to pay whatever was the reasonable cost, because they had comfort, convenience, and restfulness for the first time since they had arrived in Washington. They really looked forward to coming home after their day's work.

The girls showed me the laundry where they could launder small things and press their clothes. They exhibited with pride the tiny kitchen where they could cook up things. They said the trays were brought from the dining room to those who were ill, and that nurses from the Surgeon General's office of the War Department and from the Red Cross called to see the invalids. A small infirmary would soon be completed for the use of those who were seriously ill.

It seemed to me that perhaps the finest achievement in these buildings was that nearly 2,000 women had been given a sense of coziness and privacy and had been provided with dignified living quarters which bore evidence at every turn of the active presence of that "lady of the house" without whom no home can be complete.

The Main Lobby, Administration Building.

The Dining Room.



The Administration Building and Residence Halls on the Plaza.

Acid Test of the Airman

Seventy-five Monitors at Issoudun Selected on Practical Grounds Met All the Theoretical Medical Requirements

By Lieut. Col. HENRY HORN,
M. C., U. S. A.
Commission on Flight Surgeons, American Expeditionary Force.

AFTER all, the acid test of actual war is the only test that can destroy—or will ultimately substantiate—many of the theories and plans launched during the feverish period just before America took her place in the great battleline. Magnificent, at least, was the effort, typically American, which endeavored at one bound to bridge the inexperience of three years of actual war conditions. A fair sample of the spirit in which the brains and brawn of the country answered the call was the way over 100,000 of the finest boys in all America clamored and fought to be accepted for the air service. The nation was thrilled by it.

We never recognized the fact until later, but undoubtedly some of the curious stories of hardships endured in the entrance examinations, of the awful mortality in training, and a span of life measured by a few hours in actual fighting were German propaganda. One story that gained very wide circulation and which was constantly referred to by anxious mothers was a test where the unfortunate candidate was struck over the head with a large wooden mallet, and if he recovered his consciousness within fifteen seconds, he was accepted. In the light of the careful thought which was given to the matter of the selection of the avaitor, such stories now seem ridiculous, but in the early days the effect of them, at least, had to be considered.

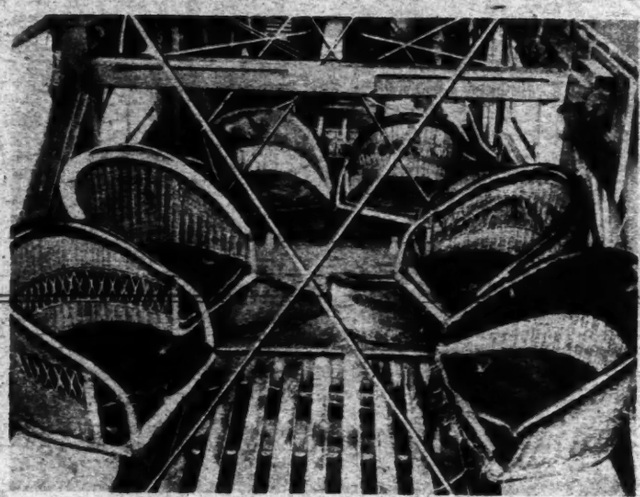
The great medical problem which presented itself was how to select from the thousands who applied those whose flying could be made most efficient in the shortest possible space of time. One quality could not be measured in the laboratory, nor was measuring it ever attempted—the quality of nerve that the American boy had in overwhelming measure. No educational propaganda was necessary to get recruits; the applicants came tumbling over on one another literally by thousands upon thousands. No insidious propaganda of fear, of danger, or of hardships could deter them. The "yellow streak" was not a factor, and in the thousands of cases examined, both in America and abroad, it never developed in a single instance.

The Medical Air Service had its inception in this first problem of selection. It was already known that the English lost 95 per cent. of their men not from the bullet of the Hun, but from avoidable physical defects. In England even up to the time of the armistice the material to choose from was poor, but in America the wealth of manhood permitted us to select only the best, and what medical study of flying requirements had taught us would be the most assimilable.

One fact from the beginning was clearly recognized—that what was needed at the front, by the tens of thousands, was not that extraordinary product of this war, "the ace," but a high average type of flier who could perform almost any sort of work, from bombing and observing to chasse work; and who could, when his special points later developed, be trained into a finished specialist as needed. General physical qualifications were exacting and were first considered. Heart and lungs, bones and joints, and every physical function must be practically perfect. It goes without saying that an aviator must see perfectly, and many a good man sorrowfully turned away who supposed he had good eyesight, or who was told for the first time in his life that he was color-blind.

A new and absorbing problem which presented itself was that of "balance." It seems axiomatic that a flier must possess a keen sense of balance—a keen perception of his position in space—but these considerations had heretofore never entered into the selection of the flier. It was already known that there are three factors involved in the question of balance — the eyes, the deep muscular sense, and the motion-sensing portion of the inner ear. We could demand perfect eyesight, and properly functioning and well co-ordinated muscles, but what of that unknown element of balance or position-sensing that seemed to be associated with the tiny semi-circular canals of the inner ear?

There are two parts to the inner ear—the sound-perceiving portion and the motion-sensing portion. Deep in the bony structure at the base of the skull are the symmetrically arranged right and left hearing and motion sensing portion of the inner ear, called the labyrinth. The semicircular canals of the latter portion are so placed at right angles to each other that the slightest movement of the body is telegraphed to the brain and there registered. They are the "spirit levels of the brain," but instead of mercury or alcohol are filled with a fluid called endolymph. In birds the semi-



From the Sketch.

In a Twenty-Passenger Airplane: One End of the Handley-Page Machine for Cross-Channel Service. Originally a "Bomber," This Plane Was Adapted for "Ferry" Service Between England and France and Has Been Used Regularly for the Transport of Military and Government Officials.

circular canals are developed to such an extent that some wit has said, "A bird is a labyrinth entirely surrounded by feathers." At the beginning of the war little was known of the relative importance of the labyrinth in the sensing of motion, and less was known as to methods of standardizing the reactions from this important organ. It was recognized, nevertheless, as one of the new and important problems in medical aviation, and the studies in the A. E. F. have more than justified the soundness of the original conception.

Because it seemed obvious to the general lay public that an aviator must have perfect eyesight, that physically he should be the acme of American manhood, little thought was given to the care and research that was needed to standardize these assets. Naturally enough, most eyes were focused on what was new and spectacular. Here in the ear seemed a short cut in the selection of that new species of war product, the superman—the airman. Put him in a big iron chair and revolve him violently and rapidly ten or fifteen times, and if he jumped out of the chair and walked a chalk line with his eyes closed, you had the embryo flier. Piano stools were in great demand, and many an evening was spent by prospective aviators in an endeavor to solve the mystery of the examinations and slip through them the next day. These piano-stool experiments did not get very close to the practice, which was the result of the serious thought and study that the American school of Otologists had given this subject for years past. One object only was sought in these carefully devised standardized chair examinations, namely, to find the men who had a normal motion sensing or balancing apparatus, exactly as the eye examination picked out the men with normal eyesight, or the physical examination selected the men with normal hearts. The problem of medical aviation was to cull from the 40,000 men examined the best-balanced men morally, mentally, and physically. After that, the educational qualifications were gone into, and the men who passed both tests were sent to the ground schools, as at least relatively promising material.

Here many fell by the wayside. It was a mental attritional process that served to eliminate those who did not have the intellectual resiliency to come back after an interval from their college and high school work. The slothful and indolent found that here was no place for a mental slacker.

And then came the flying school. Wings were literally strapped to the cadet's shoulders and he was taught to move a new element—the air. The problem was a new one, but strange as it may seem, the larger proportion of the men who entered the flying schools learned to adapt themselves to their new and novel environment. The square peg in the round hole had no place in America's plan of winning the war, and it was quickly appreciated that it would be necessary to develop many classes of fliers—high fliers, low fliers, trick fliers, straight fliers—all having their special medical problems which must be studied and understood. Studies made on Pike's Peak had shown that different men reacted differently to different altitudes as they climbed up or rode up to the top of the mountain. What would happen in the far more important case of the aviator who might ascend from the ground to 15,000 feet in a few minutes? Disturbing stories began to drift in of men fainting in the air, of falling from great heights, of hearts gone bad and nerves shattered as a result of these sudden altitude changes.

A great laboratory was established at Mineola, L. I., and specialists in every line were called upon. From the University of California came the heart man, from the University of Colorado the altitude expert, from the University of Pennsylvania the ear man, from Washington the eye man, while Yale and Harvard furnished the physiologists and psychologists.

A great steel tank was constructed, large enough to hold ten men, and from it the air could be pumped out until the equivalent of an altitude of 30,000 feet could be obtained. In this airtight chamber the observer could inhale oxygen from a tube and be uninfluenced by the altitude while the aviator under examination could be studied under any conditions of oxygen starvation that were desired. Many important problems were worked on and solved. The effect of high altitude on the eyes, the heart, and the breathing could be accurately determined. It was learned that certain men could only stand a certain altitude and then they showed symptoms of a beginning of loss of consciousness, a lack of muscle co-ordination, or even of a temporary loss of judgment and memory. Lights were incorrectly placed, instruments were read wrong, and accurate mechanical movements became impossible. It was seen that the classification of men, according to their altitude efficiency, would be an important factor. It would be suicidal to send men to 15,000 feet if they fainted at 8,000 feet. It would be murder to allow a man to fight a Hun at 18,000 feet when his judgment for distance failed below that height. So even before the men went to France, they were studied from all standpoints of altitude efficiency, and with each man went a history of the type of air work for which he was best fitted.

The Government was not content merely with selection and classification. They had taken thousands of the finest young men in the world, and were to turn them into the knights of the air. The process had been a long and costly one—probably $50,000 per man. Was such a machine to be allowed to have no special attention—to have no master mechanic listen for the mental knocks and the physical squeaks? A wonderful body of skilled mechanics had been trained to put the plane in the air and keep it there to the full span of its valuable life. The importance of this fact all the allied countries had early recognized. It was, however, a distinctly American idea to develop a system for maintaining at the highest possible level of effort the human machine, without which the most perfect airplane was worthless. Few people, indeed, who have not given the matter thought can realize how important a part food, exercise, sleep, and mental stability play in flying efficiency.

Environmental conditions which mean nothing to an infantryman or artilleryman make or break the aviator. To deal with all these intrinsically correlated problems the distinctly American product, the Flight Surgeon, was created. He stood as the end result of Aviation Medicine; the man who, as companion, friend, and medical adviser of the flier, who slept and ate, even lived, the same life in the air as the flier, was enabled to solve at first hand many of their problems and refer others for solution back to the laboratory.

During the heat of the Summer months in Texas, when sleep was all but impossible, it was the flight surgeon who insisted on electric fans or discovered a swimming hole. Were digestive disturbances rampant, appetites poor, it was the flight surgeon who substituted lemonade for soda pop and eliminated candy

between meals. Was a man flying erratic and dangerous, it was the flight surgeon who discovered that the student was worrying about home affairs. When a boy came to the flight surgeon and told him he was afraid to fly and wanted to quit, he knew that he would not be thereupon promptly branded as "yellow." Many a case of supposed "yellowness" was investigated by the laboratory or the flight surgeon, and the cause was found to be some physical or mental trouble. Had the boy continued, in spite of the trouble, he would have killed himself or wrecked a plane. Frequently, after the cause was determined, it was corrected, and the student was back at his work again with himself well in hand.

An obsession clung to many students and many instructors, that either the student was going somehow or other to discover that he had a "yellow streak" in him that he did not know about, or that the instructors would discover the "yellow streak" in question after a man got in the air. It was one of the most interesting of human problems in medical aviation practice to show that there is practically no such thing as real fear in the heart of the American boy.

Flying in the air, as can well be imagined, is at least as complicated a process as making music. Every man is not cut out for an aviator any more than every man who has dallied with a piano, as a child, ultimately becomes even a mediocre musician.

In the case of the flier, the problem is more complicated because it necessarily involves the possession of certain physical attributes entirely unconnected with the qualities of bravery, nerve and the rest. A man may even, after hours of experience in the air, feel dizzy, uncertain of himself, even afraid to try and make a proper landing and pancake over the field, much to the disgust of his monitor. In the early days, the manifestation of any such symptoms was considered as showing that the man was afraid of himself and the instructors were obliged in despair to give up a promising candidate, who seemed to have all the other attributes of a good flier. It was perhaps one of the most satisfactory advances in aviation medicine when the flight surgeon could say to the instructor, "Turn over to me any case where you are dissatisfied with a man's air work and I think I will be able to show you just where the trouble lies." Often this would be a means of restoring a man to full flying efficiency or of convincing the instructor, and incidentally the candidate himself, that it was not fear that made him do poorly, but that back of his trouble was a physical condition over which he had no control.

All of this was before the transportation of the air forces overseas; before the men had endured the actual test of flying conditions at the front and in the advanced training schools, or during that intensive period just before they took to the air as fighting fliers. Aviation medicine was conceived in America, but it had its baptism of fire under actual war conditions in France.

The great flying camp near Issoudon, nestled on a flat fertile plane, 100 miles south of Paris, was where thousands of men from the United States had their first experience in the tricky French Nieuports; their first tests of combat work far above the clouds, or trials of the difficult art of holding themselves in a battle formation. Thousands of men were put through the twelve fields which constituted this area. Many of them were sent to the front as pilots, many of them were finally considered unfit for air work, and in still others their capabilities were studied and utilized in other and more simple forms of air work. It was at this camp that was established the Medical Research Laboratory, similar to the one which was already in existence at Mineola, and here many of the problems which had been started in America were checked up.

There is one class of men whom I would like to call the "aviator hero behind the lines." These were the monitors, a group of men who had been selected as flying instructors because of their skill and experience as flyers. They had been culled out from thousands of students who had passed through the schools, because they represented in every way the ideal American aviator. No medical examination had influenced their ultimate selection. It was the hard-headed experience of their superiors; the fact that they had made good without accidents; that they were dependable morally and physically; a process of progressive, natural elimination had brought about their selection.

It is hard to imagine where a finer group could be found to serve as material for the intensive study of the American flier than these monitors, and the final analysis of the statistics was as surprising as it was satisfactory. These men were too valuable to be sent to the front; they must remain behind the battle-lines and by their superior skill, by their enthusiasm, and by their knowledge of the men that passed through their hands, they would turn out, in ever-increasing numbers, the men who finally fought our air battles.

If there was ever an opportunity for study, where a concrete and dependable result could be looked for, it was here among these seventy-five young men, none of them over 25 years of age, who unwillingly relinquished the glory of the fight with the Hun for the hard and dangerous task assigned to them.

It was tiresome work, day after day, to train students and spend often five and even six hours a day in the air teaching trick flying, combat work, bombing, and all of the other things they were so eager to do themselves under actual battle conditions. So impressed was Colonel Bingham, the commanding officer of this field, with the unusual qualities of these men, that he said jokingly, when this group study was proposed, "If you scientists discover anything wrong with these monitors, your tests must be wrong; my men are perfect." And he was right beyond even the critical expectations of the cold-blooded scientific men.

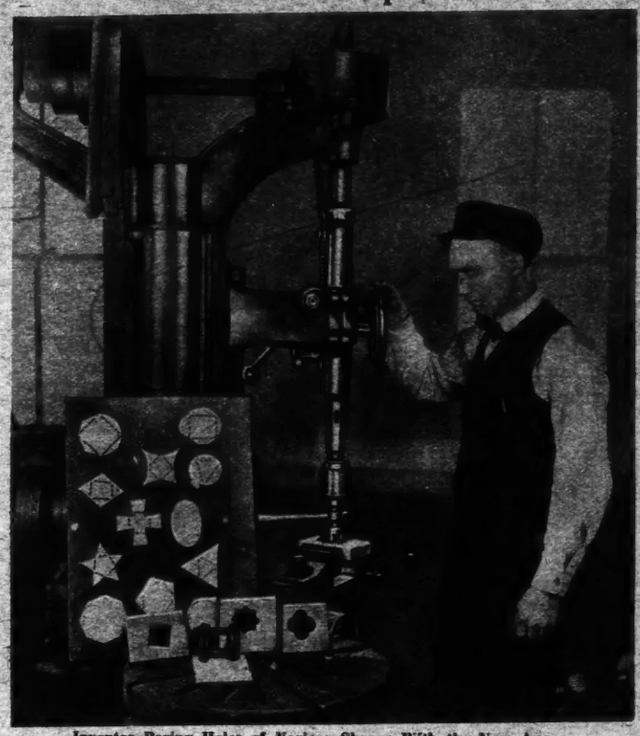
The physical examination of these men showed them all to be normal. The eye examination showed them all to possess perfect eyesight. The examination of the ear showed them all to possess a perfect sense of balance, their motion sensing apparatus was in perfect order. There were no exceptions to prove the rule. The experiment gave 100 per cent. perfect results. The word "superman," which had been loosely used regarding aviators in general, certainly applied to this wonderful group of seventy-five monitors. As Colonel Bingham again characteristically remarked, as one of the fliers from the front was being decorated with the Croix de Guerre, "If I had my way, every one of my monitors should receive the Military Cross, and well they deserve it."

In an article like this very little can be said of the immense detailed work of medical aviation, and an outline only has been attempted. Medical aviation was one of the most successful of the new features that this modern world war brought about, and it answered all the demands that were made upon it. It selected from the abundance of material the best. The best were then classified in a way that would bring out the very best that was in them, and finally that best was maintained at the highest point of efficiency.

Valuable lives and limbs were conserved with the greatest care, and had the war continued the flight surgeon would have been as important a part of every flying field as the pilots themselves.

Furthermore, the public has been taught that, in the great coming development of commercial aviation, much can be done toward eliminating even the small element of danger incident to the air work of peace times. No pilot will be allowed to risk his own life or the lives of his passengers unless it has been shown that he meets the peculiar physical requirements of the aviator.

New Tool Bores Square Hole

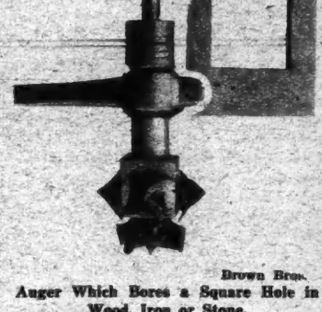


Inventor Boring Holes of Various Shapes With the New Auger.

AN auger to bore square holes has been invented by Carl H. Schmidgall of Peoria, Ill. The simple tool works its way by rotary motion through wood, iron or stone. It is really five augers in one—four little conical rotary cutters milling out the corners of the square after the main shaft has made a round hole.

Drilling a square hole through a one-inch piece of marble by present methods takes four hours or more of careful work by a skilled man. The new invention does it in five minutes. There are only a dozen parts in the machine, and, according to experts, it can be manufactured at a comparatively low price. A simple variation in the shape of the cutters makes possible the boring of holes of almost any shape.

Mr. Schmidgall has been working on his invention since he was twelve years old, while learning his trade in his father's blacksmith shop. He is now twenty-nine, and operates the biggest hand-made tool shop in Illinois, outside of Chicago. Master mechanics from all parts of the United States have recently visited his shop to look at the square hole auger, and he is receiving many invitations to visit machine shops and mechanical schools to demonstrate the working of the machine.



Brown Bros.

Auger Which Bores a Square Hole in Wood, Iron or Stone.

Plague of Civilian Pockets

FOR the love of Mike, what pockets do civilians keep things in, anyhow?" It was the wail of the Yank who had just got out of uniform for the first time since the Supply Sergeant handed him his first "O. D." which, at the time, appeared and felt to him about as strange as his newly-donned mufti does now.

"The fact that other people wear 'em ought to convince me that this thing won't break, and that nine times out of ten it won't blow off or anything," he growled, as he solemnly regarded a new derby hat. "I've had it four hours and five minutes, and every time a street car or an automobile goes by, I have to grab it to keep it from toppling off. Then I have to examine it to see if I've punched any holes through it. An overseas cap will hang to either ear, and nobody's stuck their finger through one of 'em yet! Wish they'd introduce 'em into civilian life.

"And these breeches are worse than the hat. I have a sudden impression that I've lost a legging or two every time the wind blows, and feel guilty every time an officer looks at me. But the worst thing about these clothes is the pockets. It never occurred to me before that they've got a Chinese puzzle beat a mile. Tailors ought to help explain the clothes they sell by issuing a bulletin with each suit, telling where the different things you've got to carry will fit.

"My advice to any civilians contemplating war, now or in the future, is to make out a neat little memorandum of how they've been in the habit of wearing their handkerchiefs, and pocketbooks, and knives, pencils, fountain pens, key-rings, watches, cigars, and cigarettes and similar sundries. They ought to put the memoranda away in some convenient place, so that when they come back they can memorize it and make all the spare parts fit into the main design according to plan. It would save a lot of misspent energy and vocabulary.

"I've been pulling out my pocketbook every time I wanted a cigarette today, and my cigarette case every time I wanted my pocketbook, and I haven't the slightest idea where my knife is. Whenever I reach for a handkerchief, whatever loose change I've got comes out with it."

The Dry Rot of Society

Showing How a World Made Safe for Democracy Must Now Be Made Not Less Safe for Morality

By MARIAN COX

So Victory has ushered in another war over the fresh sod of the late war, the war of our best society against the drunkard.

Society has had its fill of excitement, bloodletting and the ecstasy of conquest, and now we are prepared for the reaction into a dry, sober world of the prohibitory virtues.

If thought, as the inspiration of man, did arise from the indigestion of an overeating ape—as one evolutionist states—conscience developed as an afterthought along the same lines of our somatic experience. Abstinence follows excess; the Puritan follows the debauchée. So glutted modernity is summoned to a state of stark self-consciousness amidst the wreckage of its exploded world, the sore self-consciousness full of index fingers which "ardent spirits," so called in Colonial days, seemed especially designed to enable man to escape.

A Roman moralist wrote in the ancient *De Tranquillitate* that "The inventor of wine is called *Liber* because he frees the soul from care, releases it from slavery, quickens it, and makes it bolder for all undertakings." And to relieve the social tension in Rome that was caused by the Imperial City's excess of laws, Seneca recommended an occasional drunkenness for the lawmakers as well as for the citizens. We Americans are the inheritors of the Roman genius for law and order, and the ruling majority possess the temperament of Caesar's wife. But the Roman moralists provided the Saturnalia as a kind of official spree for the overburdened caryatides of Home and State, which may account for the lasting soundness of the Roman virtues.

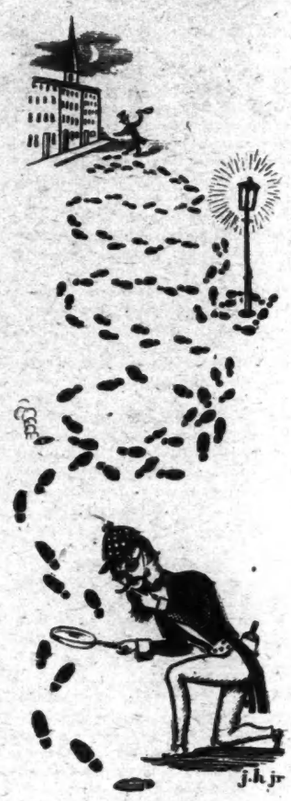
In fact, all the ancient sages and rulers have recognized and provided for the orgiastic instinct in human nature in some form or other. Savage, primitive and mediæval authorities have all builded their worlds on order—with man's right to an occasional disorder. The classic orgies of pagan forests, the Greek Orgeia and Roman Saturnalia and Christian Agapae, and the Fasching of the Middle Ages were all cunningly devised to purify society by means of an occasional spell of license. The autocrats of the past fancied that it made better subjects, workers, slaves, matrons, or Christians, to allow a complete change of conduct now and then, and they adroitly steadied their masses for their daily bondage with a play in the forbidden fields, at appointed seasons.

A holy day for the unholiness of the people was the wise policy pursued by the ancient ecclesiastics and sovereigns, who regulated life on the belief that restraint strengthens but relaxation sweetens the nature of human beings. Thus to every one was given his Day. The slaves were allowed to act as masters, the priests were allowed to blaspheme their Most High, the poor were allowed the luxuries of the rich, the women were allowed their full fling of hysterics—everybody was allowed—even *made*—to express in the open all his secret dreams of power or delight, in dance, song, mirth, feast, and drink—because of the ancient idea of the orgy's function to purify and preserve the stability of society. Well, we moderns have lost the *rationale* and right to the orgy since the Reformation; but we have evolved the cerebral orgies, distinctive of modern life, some of which Freud and his school have popularized as the ingrowing dream.

Society is about to enter a new phase of social experimentation with human nature in a nation of teetotallers, beneath the Stars and Stripes. It is a logical outcome of the late war in its influence upon the American psychology. Our war with Germany stopped in a shock of peace just when we had tasted blood and got up our steam for the knock-out blow that never came. We are an adaptive, utilitarian people and were bound to find some use for all this sudden threatened waste on our hands—of the war morality, the Intelligence Bureau, the Espionage act, &c.—that covers the face of our democracy. It was a magnificent inspiration of the lawmakers to substitute anti-saloonism for anti-Germanism and to transform the man hunt for the spy and the unnaturalized citizen into a man hunt for the drunkard as the most dangerous alien in the new rule of peace.

The drunkard must go. It is an edict given in the grand manner of the Russian Czar when he pronounced his ukase against vodka, and diverted the viciousness of the mujik into another channel, the intemperate desire to rule himself. The land of the Pilgrim Fathers is uniquely fitted for the attack upon the drunkard, and the will of the people has been ratified for a world made safe for our morality. The mid-Victorian morals could afford to tolerate the drunkard and to camouflage him as a gentleman, "as drunk as a lord," when found beneath the dinner table after the port was served; but our democratic virtues can scarcely afford to support the drunkard any longer, and society must be protected from the one who is a traitor to our civilization in so many ways.

The social machinery, as well as the morals, has been perfected by the war for the detection and destruction of the drunkard. There are the internment camps all ready for him, and the jails fast emptying of their conscientious objectors, pacifists, and dangerous aliens. The strongest point in favor of the Federal law of prohibition is that it will give an opportunity to the great war bureaucracy to continue and increase its power and work. Therefore prohibition may be a providential means of solving the labor problem which looms upon the horizon as one of the embarrassing results of the premature peace. Prohibition will require a vast army of revenue officers, police and spies to enforce the law, thus providing employment for far more millions of people than are to be disemployed by the nation-wide edict.



A Man Hunt for the Drunkard.

The Bovine Spree Is Called an "Apple Drunk."

"The teetotaller has never been accused of a bloodless pacifism."

In some Southern States where prohibition is already being enforced it is said that there is no longer any labor problem. It has caused a migration of the negroes to the North, and for the superior race, down there, it has supplied many new industries and sinecure desks. West Virginia is overrun with deputies endowed with an extraordinary power of search and seizure; and Tennessee has devised extensive offices of "State rangers" and "liquor deputies" whose sole business is that of watchful waiting for an infringement of the law. Without a doubt, prohibition is the essential step at this critical stage of our progress when society does not know whether it is crawling forward or backward, but is unpleasantly conscious of a redness, somewhere, which the optimists call a blush and the pessimists call Bolshevism.

So the teetotaller becomes the new model for the reconstructionists of the dissipated old world. The teetotaller embodies the popular virtue of renunciation. Everybody glorifies a renouncer, instinctively perceiving in the renouncement of the other fellow—whether of wine, women, his money or his life—a sweet making of room, a delicate compliment to the neighbor or the coming generation, a beau geste of surrender of a right for a duty—the quality that is preservative of the species in peace times and in war makes conscription unnecessary. Naturally, we, as traditional Puritans, love the renouncer of life, and in this divine moment of our thanksgiving for the accomplishment of our boys over there we will express it by a national deification of the teetotaller.

The teetotaller has never been accused of a bloodless pacifism even by the most abject or riotous of topers. The teetotaller is always ready for a fight, and has the angels backing him with all their flashing swords. Carrie Nation hacked her way through the saloons with her little axe as one of the great builders of the nation, some day to be immortalized in the American Hall of Fame, which refused a place to Edgar Allan Poe because he was a drunkard. And Billy Sunday, the Saint Vitus of Morality, what a man'y muscle he has for the D. T.'s of the world, and a rhetoric that bombards the masses into his brand of religion.

In the new social order, to discover, to expose, and to catch the drunkard will soon become our patriotic duty as well as the fashionable hobby of both the sheep and the goats. "Moonshiner" will be the cliché of conversation, exploited like "pro-German" by the moral sensationalists, eager for suspects. The recluse or the aristocrat who indulges in too much privacy of life will be liable to the ugly suspicion and rumors of a secret still; and only the frankest exposure of one's home life and daily habits will be able to satisfy the new sleuths of democratized domesticity. Conceivably, one might be made to display a medical voucher of a household's abstinence from alcohol in the doorway of the home, replacing the Food Administration's recent vouchers of a citizen's abstinence in another regard.

Openness in the home life and steadiness on the streets will become the standard of conduct, propriety, and Americanization. The man who zigzags in his walk may receive the summary justice of the mob that was so well practiced on the blond beasts of our recent

(Continued on Page 14)

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How to Increase Your Will Power

Author of This Article Tells How He Acquired a Will Power that Helps Him Earn Between $50,000 and $70,000 a Year

FOUR YEARS ago a man offered me a wonderful bargain. He was hard up for money and wanted to sell me some shares in a young, growing company for $1,000. Based on the earnings of the Company the stock offered me was easily worth $5,000—in fact, the man who finally bought the shares sold them again in five months *at a profit of* $4,300.

The reason I didn't buy the shares was that I could no more raise a thousand dollars than I could hop, skip, and jump across the Atlantic Ocean. A thousand dollars! And my income only twenty-five a week.

The second chapter in my life began a few months later, when another opportunity came to me. It required an investment of $20,000 during the first year. I raised the money easily, paid back every penny I borrowed, and had $30,000 left at the end of the first year! To date, in less than four years, my business has paid me a clear profit of over $200,000 and is now earning between $50,000 and $70,000 a year. *Yet for twelve years before, the company had been losing money every year!*

The natural question for my reader to ask is, "How could you borrow $20,000 to invest in a business which had previously been a failure, after being unable to borrow $1,000 for an investment that seemed secure?" It is a fair question. And the answer can be given in two little words—*WILL POWER.*

When the first proposition came to me I passed it by simply because I didn't have the money and couldn't borrow it. I went from one friend to the next and all turned me down. Several refused to talk business with me at all. They all liked me personally, and they asked about the kiddies, but when it came to money matters I hadn't a chance. I was scared stiff every time I talked to one of them. I pleaded with them, almost begged them. But everybody had their "money all tied up in other investments." It was an old excuse, but I accepted it meekly. I called it hard luck. But I know today that it was nothing in the world except my lack of Will Power or rather my weak Will Power, which kept me from getting what I wanted.

Partial List of Contents

The Law of Great Thinking.
The Four Factors on which it depends.
How to develop analytical power.
How to think "all around" any subject.
How to throw the mind into deliberate, controlled, productive thinking.
Detailed directions for Perfect Mind Concentration.
How to acquire the power of Consecutive Thinking. Reasoning. Analysis.
How to acquire the skill of Creative Writing.
How to guard against errors in Thought.
How to drive from the mind all unwelcome thoughts.
How to follow any line of thought with keen, concentrated Powers.
How to develop Reasoning Power.
How to handle the mind in Creative Thinking.
The secret of Building Mind Power.
How the Will is made to act.
How to set your Will.
How a strong Will is Master of Body.
What creates Human Power.
The Six Principles of Will Training.
Definite Methods for developing Will.
The NINETY-NINE METHODS for using Will Power in the Conduct of Life.
Seven Principles of drill in Mental, Physical, Personal power.
FIFTY-ONE MAXIMS for Applied Power of Perception, Memory, Imagination, Self-Analysis Control.
How to develop a strong, keen gaze.
How to concentrate the eye upon what is before you—object, person, printed page, work.
These are only a few of the many subjects treated.

When I heard that the man sold them shares at a profit of $4,300, it seemed that my sorrow could not be greater. That profit was just about what my salary amounted to for four years! But instead of grieving over my "hard luck," I decided to find out why I was so easily beaten in everything I tried to accomplish. It must be that there was something vital that made the difference between success and failure. It wasn't lack of education, for many illiterate men become wealthy. What was this vital spark? What was this one thing which successful men had and which I did not have?

I began to read books about psychology and mental power. But everything I read was too general. There was nothing definite—nothing that told me *what to do.*

After several months of discouraging effort, I finally encountered a book called "Power of Will," by Prof. Frank Channing Haddock. The very title came to me as a shock. When I began to read the book I realized that will power was the vital spark—a thing that I lacked. And here in this book were the very rules, lessons and exercises through which anyone could increase their will power. Eagerly I read page after page; including such articles as The Law of Great Thinking; How to Develop Analytical Power; How to Concentrate Perfectly; How to Guard Against Errors in Thought; How to Develop Fearlessness; How to Acquire a Dominating Personality.

An hour after I opened the book my sluggish will power was beginning to awaken. There was a new light in my eye, a new spring in my step, a new determination in my soul. I began to see, in my past, the many mistakes I had made, and I made up my mind I would never make them again.

I practiced some of the simple exercises. They were more fascinating than any game of cards or any sport.

Then came an opportunity to acquire the business which had lost money for twelve years, and which I turned into a $50,000 a year money maker. Instead of cringing before the moneyed people, I won them over by my sheer force of will. I would not be denied.

I am convinced that most men have within themselves most essential qualities of success but many lack strong wills. Any man who doubts that statement need only analyze the successful men he knows. Without a strong will education, money and opportunities count little.

I earnestly recommend Prof. Haddock's great work, "Power of Will," to those who feel that success is just out of reach—to those who lack that something which they cannot define, yet which holds them down to the grind of a small salary.

Never before have business men and women needed this help so badly as in these trying times. Hundreds of real and imaginary obstacles confront us every day, and only those who are masters of themselves and who hold their heads up will succeed. "Power of Will" as never before is an absolute necessity—an investment in self-culture which no one can afford to deny himself.

I am authorized to say that any reader who cares to examine "Power of Will" for five days may do so without sending any money in advance. If after one hour you do not feel that your will power may be increased, and if after a week's reading you do not feel that this great book supplies a faculty you need to win success, return it and you will owe nothing. Otherwise send only $3, the small sum asked.

Some few doubters will scoff at the idea of will power being a means of obtaining wealth, position and everything we are striving for, but the great mass of intelligent men and women will at least investigate for themselves by sending for the book at the publisher's risk. I am sure that any book that has done for me—and for thousands of others—what "Power of Will" has done—is well worth investigating. It is interesting to note that among the 250,000 owners of "Power of Will" are such prominent men as Supreme Court Justice Parker; Wu Ting Fang, Ex-U. S. Chinese Ambassador; Gov. McKelvie, of Nebraska; Assistant Postmaster-General Britt; General Manager Christeson, of Wells-Fargo Express Co.; E. St. Elmo Lewis; Senator Arthur Capper of Kansas and thousands of others. In fact, today "Power of Will" is important, and necessary to a man's or woman's equipment for success.

As your first step in will training, I suggest immediate action in this matter before you. It is not even necessary to write a letter. Use the form below, if you prefer, addressing it to the Pelton Publishing Company, 105-H Wilcox Block, Meriden, Conn., and the book will come by return mail. Over a million dollars has been paid for "Power of Will" by people who sent for it on free examination. Can you, in justice to yourself hesitate about sending in the coupon? Can you doubt, blindly, when you can see, without a penny deposit, this wonder-book that may help increase your will power.

The cost of paper, printing and binding has almost doubled during the past three years, in spite of which "Power of Will" has not been increased in price. The publisher feels that so great a work should be kept as low-priced as possible, but in view of the enormous increase in the cost of every manufacturing item, the present edition will be the last sold at the present price. I urge you to send in the coupon now.

PELTON PUBLISHING COMPANY
105-H Wilcox Block, Meriden, Conn.

I will examine a copy of "Power of Will" at your risk. I agree to remit $3 or remail book in 5 days.

Name .....

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Reconstruction of Commercial Design

Art at Home and Abroad

"The Football Game," by Spencer Pryse, Whose Lithographs Are Now on View at the Ehrich Galleries.

INDUSTRIAL art as it is taught in twenty-six art schools and trade schools in New York City is the subject of an exhibition at the gallery of the Art Alliance of America. The graphic arts, fashions, textile designs, metal, glass, modeling, interior decoration, stage craft and toys are the subdivisions of the exhibition, and much of the work shows invention, good taste, and a certain degree of skill. It shows that the cleverness and intelligence of the student may be counted upon in the effort to train American designers to compete with those of European countries. But it also shows that still we are very far from being in a position to contemplate such competition without the greatest foreboding.

The catalogue of the exhibition contains a number of instructive statements including the very unfortunate fact that New York, "the largest city in the United States, with a population of about six million people, of whom more than one million are of school age, has no adequate, well equipped free school to train craftsmen and designers." The New York Evening Industrial Art School, which is part of the public school system, is conducted in a building used during the day as an elementary school and has "absolutely no equipment for art work." This school and the Cooper Union Evening Art School for Men accept as pupils "only those employed during the day in industries in which art plays a part; the students are, therefore, serious, and the work very professional."

Miss Florence Levy, who writes the introduction to the catalogue, reports that investigation has shown the best equipped of the schools and classes to be the Department of Fine and Applied Art of Pratt Institute, and the Art Department of Teachers College, Columbia University. The New York School of Applied Design for Women is the only one that has its own separate building erected for its specific purposes. "Some of the other schools and classes are laboring under great difficulties, using remodeled stables, attics, and lofts of public buildings." Further on, Miss Levy refers to the investigation of the Merchants' Association of New York City as to the furniture industry of the city, which is the third greatest furniture manufacturing city in the United States, and has an enviable record for the quality of its product. The quality results primarily from excellence of design and workmanship and from careful selection of woods. The artist is an indispensable factor in the industry. And he has come from Italy, Germany, Hungary, France, and Sweden, especially from Italy, and almost never from our own schools. The reason is simple. The industry cannot afford to employ men who are not trained to the highest point.

This industry is only one of many similar examples that lead naturally to Miss Levy's modest conclusion that "a well-developed system of industrial art education with city, State and Federal support is greatly needed at the present time," and "would enable American manufactures to hold a foremost place in the world's commerce."

Already, as those interested in this most interesting of subjects know well, organizations, committees, and individuals are applying themselves to the solution of a problem too long postponed. The museums and the manufacturers are slowly moving toward one another in a spirit of co-operation. The schools are doing their best under existing conditions. But conditions are not yet favorable for any best to be as good as it should be in the face of our compelling need.

It is worth while to glance at the efforts of France, the nation of arts, to defend her industries from competition by training an army of industrial artists at home and restoring her eighteenth century prestige in this field. In 1916 and 1917, while the war was still raging, the dauntless Central Technical Committee of the Applied Arts pursued investigations in all the regions of industry to obtain information concerning conditions and suggestions for improvement.

A questionnaire was sent out to find out from regional committees what industries in the different regions especially suffered from enemy competition, what were the causes of success on the part of the enemy, what measures could be taken in the future to prevent a repetition of such triumphs, and what foreign markets were open to the artistic industries.

The Committee of Toulouse responded with such a clear analysis of the situation and with such a courageous facing of the facts that even a mere outline of its report will be illuminating.

"Let us set aside," the committee says, "personal controversies over the quality of the Austro-German product, which in many cases would sustain an impartial examination; over the choice of forms which frequently, one cannot deny, is very happily in accord with the destination of the objects manufactured; over the adaptation to the taste of the purchasers which seems to be the dominant preoccupation of the enemy manufacturer; over the net cost, which always is very favorable, as Germany seldom is tributary to any foreign country in its raw material; and in order not to stray into individual judgments or spill over into Chauvinism, let us coolly survey the general organization of Austria and Germany to detect the causes that impress themselves upon us without admitting discussion. There is revealed an absolutely perfected mechanism of organization in their national industries, and in the organization of their teaching an incomparable manual education, a marked preoccupation, with the legal recruitment and formation of apprentices, with the general education of young workmen pushed to include complementary studies judged essential—in design, in composition, bookkeeping, commercial law, foreign languages, &c., a particular pedagogy that makes of the commercial travelers a class of skillful technicians in the art of selling."

In the organization of their social economy conspicuous features are "recruitment of handicraft, always proportioned to the needs of the industry, regulated in the minutest detail by a central bureau of commerce and industry; an intelligent development of associations that bring together art, industry and commerce, societies for the aid of sick or aged workers, and—to sum up—an exact and codified conception of the rights and duties of the worker toward the patron and of the patron toward the worker."

These and other practical merits of the German system are recognized by this committee, and among the suggestions for meeting them these are given:

The reorganization of the teaching of design in the primary schools, directing it toward utilitarian ends and confiding it to instructors chosen for their technical mastery.

The creation of privileges and advantages by which artist, artisans and workmen may benefit.

The institution of a minimum wage for the day's work of an art worker.

The establishment of a degree for superior work which shall have the value of a university medal.

While the conditions in this country are very different from the conditions in France, there is much in the reports of the regional committees that would apply to our problems which are difficult in a degree to make welcome any helpful suggestions whatever.

The idealistic attitude of M. Caro Henri Delvaille seems, however to many a serious thinker the most truly practical of any; the one, that is, which will be most apt to inspire artists, and to create art. Art is what we want, whether we attach to it the tag "industrial" or any other tag. It must first be art or it will be of no manner of use to any industry existing. Therefore, to get art into the schools we must first do something toward organizing our artists and encouraging them to produce. M. Delvaille, in his articles in "The New France," has urged the founding of artistic communities in quiet places away from cities. Surrounded by gardens, should be groups of small buildings, each group dedicated to some branch of artistic endeavor, such as ceramics, tapestries, woodwork, metal work, &c., and in the centre of each group a section reserved for "the legislature of all the arts, architecture." Each guild would have its master, assistants, journeymen, and apprentices.

Because the education of artists has been so woefully neglected in modern times, this sounds like a mediaeval idea such as stimulated William Morris in England to unheard-of efforts—efforts that did indeed "change the face of all England." But how is the plan so different from the university idea in general education? Art has as many branches as a college curriculum, and requires leisure and a certain degree of isolation and trained masters. A great American university dedicated to instruction in the various forms of art would at least awaken the country to a knowledge of its "spiritual and artistic resources," ignorance of which, M. Delvaille says truly, is a weakness of democracies.

Another suggestion made for France is that rich, intelligent men should found factories devoted to the decorative arts, and the author's shrewd conclusion is that in this case the further such enterprises were removed from immediate commercial considerations the more commercially rewarding they presently would prove to be. This suggestion also is applicable to America.

Finally for the more inexpensive types of product, for which a high degree of technical training is not necessary, which must be made for the whole people at prices which can be paid by the poor, M. Delvaille turns to the children.

"One way of relieving the spiritual grossness of our industrial world," he says, "might be to bring it into contact with beings as yet unsullied—the children. With his ingenuous mind and fresh imagination the child could introduce an element of the unexpected into an art become utterly banal. In France, about fifteen years ago, a man of great intelligence, a M. Quenioux, completely transformed the methods of art education in the public schools. His results were astonishing. The whole genius of our race reappeared in the work of these French youngsters, once they were freed from the pedantry of the old methods. And so if the porcelain industry were to ask our children to make designs for decorated chinaware I am sure that even the commonest grades of porcelain and faience would soon exhibit a new vivacity and beauty. The charm of candor and simplicity, the freshness of invention of the artisans of older times, would appear once more in our homes. It remains for us to make the effort."

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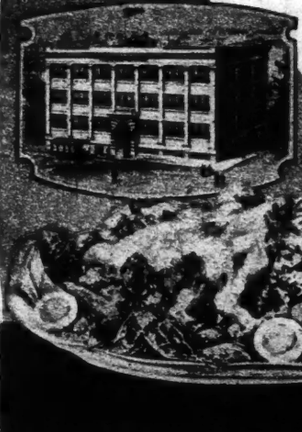

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No German Music---Lest We Forget

By ELEONORA DE CISNEROS.

Herewith is presented a musical artist's view of German music. Mme. de Cisneros was prompted to write this on hearing Brangaena's cry at a concert in New York recently. She is a mezzo-soprano widely known from her connection with the Metropolitan Opera House and other opera houses in Europe. During the war she sang frequently for Red Cross funds, and recently was decorated for her services to the organization.

"If ye break faith with us who die,
We shall not sleep though poppies grow
In Flanders Fields!"

IT was at a symphony concert. My soul had responded to the eternal beauty and purity of the "Unfinished Symphony." The world seemed lovely even if the rain made Sunday gloomy and unsympathetic. Krehbiel, that dean of music critics, had been telling of the days when Mozart was sung with a religious simplicity which only the truly great artist evokes, and my memory brought me back to the student days here in old New York, when we learned from the lips of a Sembrich and a Lehmann what tradition in music (singing music) means.

Suddenly it seemed to me that I was on a ship—an old Viking's ship! In the distance a pale woman lay on a purple velvet couch, on a near-by table stood a golden goblet. I watched the woman, then I watched the blue sea, and again I watched the woman, whose sadness made me sad. And through it all came an insiduous music that made me suffer. Music that pulsated with life and love and a longing never satisfied. Suddenly I no longer saw the ship. I saw the Somme! I saw a place in "No Man's Land" that for a year had not been crossed but by the dead! It was night, a moonless night, and thousands of tiny lights moved over the fantastic field. Strange phosphorescent spirits rushed past me and were lost in the impenetrable darkness beyond, and through it all came a moaning, a cry of pitiful pleading—"Do not forget us so soon!"—and the glowworms over the slimy bed of death flew wildly as if forced by the ever-increasing volume of unsatiated harmonies.

The vision passed! But it seemed as if my heart would break with sadness

© Mishkin.
Mme. Eleonora de Cisneros.

and pain! No longer was I "Brangaena" visualizing my "Isoldas," from the German Gadski to sweet Lillian Nordica, (I was her last Brangaena); from the Italian, French, Russian, and Polish soprani who had sung the Irish Princess with me to the Austrian Matzenauer, (we sang the last "Tristan" that will be heard for many a day in Paris.) Even the frightful Somme vanished and I was listening to a superb rendition of the "Prelude" of "Tristan und Isolde." The first Wagner music I had heard since 1916.

Around me were hundreds of Americans—I presume they were Americans. There is a certain Dr. Max Winter, who says that there are 800,000 Germans in New York City who want German music! But you men and women who listened to that music, if you have a drop of allied blood in your veins, how could you applaud it? To me it was as full of tragedy as the "Marche Funebre" of Chopin, and I would as soon have applauded as I would have laughed at a procession of the weeping, violated women-children of France and Belgium!

Wagner's music is a consolation to German ears. I myself, an American, love it. It is not wildly temperamental as the Italian music, nor as sensuous as the French. It is the music of thought, full of unsatisfied desires, of "sehnsucht," of longing. To the German soul it heals the wounds that even our enemies have. To them it is above all else the spiritual symbol of the German Spirit, the Fatherland! The man or woman who can today listen to German music as in ante-bellum days is either a German, a neutral, or a pacifist!

The time is not yet ripe for the German music propaganda. Let our dead have time to sleep. Our wounded time to heal. Our maimed time to walk happily, even be it with one leg or one arm! Our blind time to smile with sightless eyes! Then, too, may the flowers bloom over ther trenches that the Germans glorified with the names of Wagner's heroes—Wotan! Siegfried! Until then, let them wait—lest we forget!

"Fat German Children"

THE plumpness and sturdiness of the German children have been mentioned by American visitors to the Rhine country. Private Walter Phillips of the 165th Infantry recently sent home a picture of the little daughter of his German host, an army officer. Last week a letter from a woman who is with the American Red Cross at Toul contained the following:

"I have been to Luxemburg and Germany since I wrote to you—to Metz, through devastated Pont à Mousson, and from there into lovely green Luxemburg.

"The country is beautiful from Luxemburg to Treves, up the Moselle Valley, and the villages so clean, and the children so numerous and so fat. Not one single little pale-faced child did we see. I wanted to stick my tongue out at every one I saw.

"And the men and women in Treves all looked so well fed, and the city so prosperous. Of course the statistics say the children are underfed and the death rate high, but I certainly saw hundreds of huskies!"

Three-Year-Old Daughter of a German Lieutenant at Remagen-on-the-Rhine. Photograph from a Private in the 165th Infantry.

The Dry Rot of Society

(Continued from Page 10)

furor; and the gentleman of the salon who gives himself away with a hiccough or an indecent cheer will be snubbed by everybody who is anybody with the expert snubs so recently visited upon the fool or knave who mouthed of peace at the dinner table before the armistice was declared.

The drunkard is characterized by an exaggerated sociability which may have something to do with the imperative attraction of the bottle to him. He finds society indispensable to him in his quest of effect and is as ready as a homeless dog to make friends with every stranger. Almost invariably he is a good mixer, a boon companion, and a clubbable fellow, whose entire lack of snobbishness should commend him to the mercy of our democracy, at least. The drunkard never sits in judgment upon his fellow-men. His fault is an abject one, and he loves to condone "human nature" for its many failings, and seems free from all society's fears of the faux pas, although a rank victim to the fear of loneliness, which drives him to seek the gregarious warmth of people or of booze. The drunkard is an idealist who wants things different from what they are, and he is striving in his way, curiously enough, to reform society and create a better world of men and women, living a hyperbolic, englamoured life that carries out to the fullest extent all the socially damned instincts of the human race. Thus, like the teetotaller, the drunkard is an idealist and an extremist, though the resemblance stops there; for the drunkard drinks out of a profound humility of being, and the teetotaller speaks out of the vainglory of the faultily faultless.

The drunkard is also like the German in being the victim of a false absolute that has perverted his emotion of the ideal. To the German the false absolute was Germany, and he sought her glory beyond the frontiers of his national experience. But the false absolute of the drunkard is life, and he seeks its glory beyond the frontiers of his personal experience in a divine debauch. He drinks to escape his own confines. He drinks with a mystic hankering that makes his toast like an unutterable prayer that he may feel one with the gods for one glorious moment of their sun-soaked eternity. He drinks to escape himself and the sober, stone-eyed world which has hitched all his little stars to a treadmill, a petticoat, or a plow. The drunkard could give to society profound reasons and excuses for drinking, if only he were gifted with the language of other-worldness. It is the tragedy of the drunkard that he is too full for utterance, even when sober.

Do the gods drink? The Greeks fancied so, and peop'ed Olympus with a comely crew of high-livers, the memory of whose ambrosial feasts haunts our prohibited spirits for all time. The drunkard is assailed with this memory in the flesh, a kind of misplaced nostalgia for man's lost provinces of bliss. The most humble of mortals, he seeks to climb out of his dull clod on a borrowed wing or a throb of the universe, whose heart is full of tears and flame.

It is true the drunkard sins against the social laws and against the Holy Ghost in himself, but it can scarcely be said against him that he sins also against natural law. Alas! Nature abets him in his shameful vice, and scientists say that alcohol is the mechanical energy of the sun which literally soaks matter (makes an old souse of mother earth!) and creates a little moonshiner out of nearly everything that grows. The drunkard can extract his fatal beverage from white blossoms or black peat; and the fruits of the orchard, the berries, the woods, the reeling fields of grain, all offer their wide-open bar of Bacchus to him in sunny defiance of every law that society can enact. Yes, nature must shoulder some of the guilt of the drunkard, for she is a universal distillery forever brewing her inexorable essence of delight and hurt for man and beast and has protected her immoral traffic by perpetuating in all that lives the appetite for the intoxications of life.

Man has been defined as the only animal who makes love at all seasons and who drinks when he is not thirsty. The remark of some wily Puritan who would glorify the inferior animal in his desire to degrade the human. For all through the animal creation we can discover the same old intoxication impulse, subject only to the control or cultivation of the creature's will. Naturalists relate that insects are frequently intoxicated by indulgence in overripe fruit juices; elephants and dogs, and even that paragon of domesticity, the barnyard hen, have been found to possess a natural alcoholic taste capable of an abnormal development. And the gentle cow—the Madonna of mammals!—succumbs to temptation in the windfall season, when the ground is spread for her feast of the fatal apple. The bovine spree is called "an apple drunk" by farmers, and the agricultural colleges give instructions on how to treat and cure the fallen creature at this time in order to keep her milk pure rather than her morals.

Can virtue intoxicate?

If so, the patriautocrats of prohibition and democracy should be made to realize the fact and to incorporate it in a law for the regulation and control of the virtues against the dangers and follies of excess.

Wine, poetry, and virtue! Surely a little of each is good, though a great deal may carry the imbiber to the padded walls or moral crusades of society. Virtue as a saver to the spirit acts as a preservative of tone and color, like alcohol, but an excess of virtue corrupts and destroys like the vice of dipsomania. Even self-sacrifice, the supreme virtue in our morality of war or peace today, carried to excess becomes a statutory offense, suicide.

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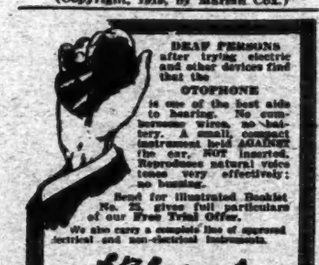

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By Calvin Cady

WHAT I saw as I looked around amazed me.

A tiny sound such as might have been made by a small pencil dropping on the floor caused me to turn my head and glance along the rows of people sitting to my right.

I peered to the left. Then I looked back of me. Every person within my sight in that great hall sat in silent, rapt attention, drinking in the words of the speaker. Each man and woman seemed spellbound. I have rarely in my life seen such complete absorption universally expressed by an audience. What a tremendous power to wield over other people!

I turned back to the platform, realizing that I too but a moment before had been wholly unconscious of myself in listening to the speaker, Dr. Frederick Houk Law. I had come to hear him only half heartedly, not expecting anything more than the usual evening lecture before the end of which I would very probably doze off once or twice.

But his first words had whirled me up and away with him, leaving my physical self in the chair, intent and listening. I may even have been sitting with my mouth open as were some of my neighbors. There was excuse enough for it.

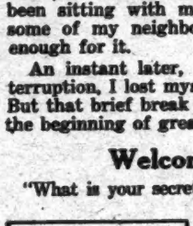
An instant later, after the accidental interruption, I lost myself in the lecture again. But that brief break in my attention marked the beginning of great things for me.

Welcome News

"What is your secret?" I said as I shook Dr. Law's hand after the lecture. I wouldn't have been satisfied to go home that evening without at least a word or two with the man who had held us enthralled for two hours and a half.

"I have no secrets," he answered. "Whatever I know of the use of speech I have given to the world. If I am able to talk convincingly and interestingly it is no more than you may do by following the rules that I have followed."

Then Dr. Law told me that he had condensed his principles of business talking and public speaking into eight short lessons, under the title "Mastery of Speech" and the course had been published by the Independent Corporation. Also that I might examine "Mastery of Speech" without spending a cent. I need simply ask to have the eight lessons sent to me.



FREDERICK HOUK LAW

As educator, lecturer, executive, traveler and author few men are so well equipped by experience and training as Dr. Law to teach the art of effective speaking. His "Mastery of Speech" is the fruit of 30 years' active lecturing and instruction in Eastern schools and colleges preceded by an education at Oxford Academy, Amherst College, Columbia University. The Teachers College, Brown University. He holds the degrees of A.B., A.M., and Ph.D.

Dr. Law is the author of two novels, two books of poetry, and editor of six school text-books. At present he is lecturer in English in one of the greatest Universities, lecturer in Pedagogy in the Extension Work of the College of the City of New York, head of the Dept. of English in the Stuyvesant High School and writer of the Weekly Lesson Plans for the Independent Magazine.

I didn't realize that I had never been able to talk until after my first half hour with "Mastery of Speech." When I say that I have just learned to talk at the age of 34 I mean it. I had used words, of course. But my words and the way I used them had never accomplished the real purpose of human speech—putting across ideas. For instance, in a business meeting what I said always seemed to fall flat. My ideas were good—I knew they were—but I simply couldn't shape them into convincing sentences. The result was that when I talked people didn't pay attention because I didn't say things that held them and impressed them.

In social life it was much the same way. My remarks were passed by, and my opinions and comments didn't get attention. I didn't want to sit silent, but just as sure as I started to say something I would be interrupted or talked down and my words ignored. I see now that this was not a matter of rudeness on the part of my listeners but simply my failure in the use of spoken words.

Like the average man I didn't know how to talk, whether it was in a business conversation with a single individual, a social chat with a group of friends or a speech to a regular audience. Then came "Mastery of Speech" and the whole secret of effective talking opened up to me.

How the Good Talker Wins

I learned how to make people listen to what I said. I learned how to say what I meant and say it in the most striking way. I began to use words so as to drive my thoughts in on my hearers. I learned how to say things interestingly, forcefully and convincingly. My influence over others and my executive power increased. I was able to give my opinions impressively and tersely, answer questions concisely and with the right choice of words and dictate letters forcefully and briefly. I accomplished twice as much in my day's work.

I put new power into my talks with customers and people in the office. I had the attention of others when I began to speak. And I was able to hold it and make the most of it. I learned why I had been afraid to stand up and talk to a group of people. I found that it was no more a trick to talk to a crowd than alone to my best friend. And better yet I found that with my new ability I might carry a crowd right with me and make them think as I thought.

Then there were a hundred useful things I learned about the use of speech for different occasions. I found out how to ask the bank for a loan, how to ask for an extension, how to talk to servants, to children, how to make complaints, give estimates and issue orders. There is a right way to do all these things and when you learn to fit your speech to the occasion your progress not only becomes easier, but difficulties seem to melt before the magic of trained speech.

And this secret of speaking effectively has enabled me to pile up a score on the world that surprises me when I think of it. I have started to climb since I learned to talk and see nothing ahead that is going to stop me. I used to wonder how it felt to have $1,000 all at one time. Last week, before paying cash for a residence lot on the best street in our town, I knew how it felt to have $20,000 all at one time. It astounds me when I think of the change in my fortunes.

Just a word more. Remember this: talking is one of the vehicles by which you can express your personality. It is your principal means of communication with your fellow man, and the spoken impressions you make on him will decide both your social and business careers. You may have the ideas, you may have the knowledge, you may have good intentions, but if you can't speak them so that every word scores in your favor you might as well resign yourself to being a "small potato" all your life. I've been through it and I know.

Calvin Cady.

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So confident is the Independent Corporation, publishers of "Mastery of Speech," Dr. Law's course in Business Talking and Public Speaking, that you will be delighted with the Course once you have an opportunity to see in your own home how easily you can learn convincing speech and apply the principles of effective talking under all conditions that they are willing to send you the course on free examination.

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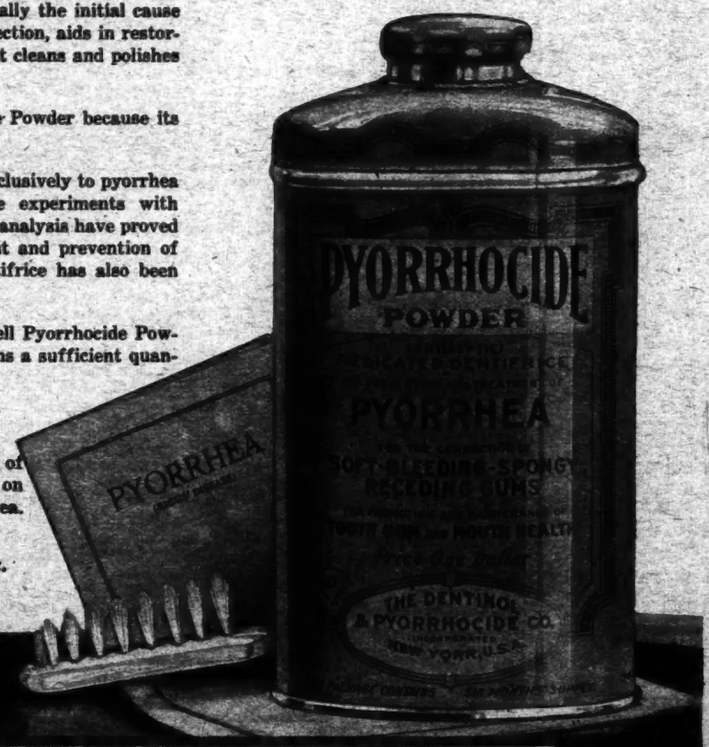

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